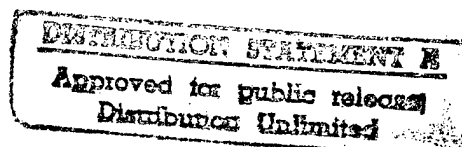


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Materiel Can Be Reduced Without
Impairing Combat Effectiveness

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REPORT BY THE

Comptroller General

OF THE UNITED STATES

Army's Requirements For War Reserve Materiel Can Be Reduced Without Impairing Combat Effectiveness

The Senate Appropriations Committee asked GAO to review the Army's stock fund war reserve program to determine if the Army's requirements are realistic in view of the large dollar deficiencies in its budget request.

GAO recommends ways to reduce the Army's requirements for war reserve materiel without impairing combat effectiveness.



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LCD-78-422A
DECEMBER 14, 1978



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-133396

The Honorable John C. Stennis
Chairman, Subcommittee on Defense
Committee on Appropriations
United States Senate

Dear Mr. Chairman:

A Senate Appropriations Committee report (95-325, July 1, 1977) contained a request asking us to review the Department of Defense's war reserve procurement program. The report mentioned that this study will build on previous GAO reviews of this subject.

In discussions with representatives from your office in August 1977, we agreed to review certain aspects of each service's war reserve program separately, rather than evaluate the entire program all at one time. It was agreed that this course of action would respond to the Committee's request for GAO assistance in this area.

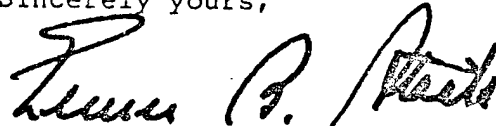
This is the unclassified version of our SECRET report (LCD-78-422). It deals with the Army's wartime planning for logistics support and operations, and the planning factors involved which significantly affect materiel requirements for war. It points out that a number of the underlying planning assumptions need to be reassessed and changed to improve the effectiveness of wartime logistics support.

As you requested, we met with Defense officials to obtain their official oral comments and have made changes in the report, where appropriate.

B-133396

As arranged with your office, we are sending copies of this report to the Secretary of Defense; the Secretary of the Army; the Director, Defense Logistics Agency; and the Director, Office of Management and Budget. We will also provide copies to the Chairmen, House Committees on Government Operations and Appropriations, Senate Committee on Governmental Affairs, and the House and Senate Committees on Armed Services. Copies will also be available to other interested parties who request them.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Thomas B. Smith". The signature is fluid and cursive, with the first name "Thomas" and last name "Smith" being more legible than the middle initial "B.". The signature is written over the typed name and title.

Comptroller General
of the United States

COMPTROLLER GENERAL'S REPORT
TO THE SENATE COMMITTEE ON
APPROPRIATIONS

ARMY'S REQUIREMENTS FOR WAR
RESERVE MATERIEL CAN BE
REDUCED WITHOUT IMPAIRING
COMBAT EFFECTIVENESS

D I G E S T

War reserve materiel is now prestocked in peacetime as a direct result of the United States being unprepared for the surprise attack on Pearl Harbor starting World War II. The war reserve requirements are based on studies of enemy threats and capabilities throughout the world.

At the end of fiscal year 1978, the Army reported a \$1.7 billion deficiency in war reserve stock fund items. Major deficiencies during the year were in clothing and textile items (\$991.8 million) and aviation spares and repair parts (\$157.8 million).

The Senate Appropriations Committee asked GAO to review the Army's stock fund war reserve program to determine if the Army's requirements are realistic in view of the large dollar deficiencies in its budget requests.

The deficiency, if valid, would appear to leave the Army unprepared for an armed conflict. The reported requirements and deficiencies, however, are driven by a number of assumptions and factors, which, if altered to some extent would reduce requirements and the corresponding deficiencies considerably. GAO believes some of these factors can be decreased or eliminated entirely without impairing combat effectiveness.

GAO found incongruities in the logistics planning for war reserve stock fund items. For example, Secretary of Defense logistics guidance is the driving force and basis for computing war reserve requirements. In fiscal year 1978, the lack of specificity in the guidance caused different interpretations by logistics planners. If the Army used the more conservative planning scenario

used by the Defense Logistics Agency, its requirements and deficiencies would be substantially reduced. (See ch. 3.)

Because of fund limitations and in an attempt to achieve a balanced war reserve posture, a recent Secretary of Defense directive limits procurement of war reserve items to satisfy needs for only one half the days in the total planning scenario period. However, the Army practice of including safety levels and residual force quantities as early mobilization requirements tends to unnecessarily increase requirements rather than achieve a balanced war reserve inventory, and makes them eligible for purchase.

GAO also believes savings could be realized if Defense components relied more on increased industrial preparedness planning rather than on prestocking of war reserve items. (See ch. 4.)

GAO believes several major assumptions and factors used by the Army in computing war reserve requirements for aviation items are questionable and lead to overstated requirements. One such factor is the combat flying hour estimate. The Army flying hour program is based on rapid delivery of helicopters to the combat theater. Spare parts requirements, on the other hand, are based on outmoded, maximum delivery times. The Army's airlift program has not been coordinated with the Air Force's Military Airlift Command. (See ch. 5.)

The Army is reporting to the Congress serious deficiencies (\$415 million) in its high-priority stocks which are prepositioned for ready mobilization. The congressional oversight committees may not be aware that the Defense Logistics Agency has \$654 million of these same types of items in lower priority war reserve inventories. Funding controls preclude transfer of these items to the priority category.

GAO also found problems with the requirements for chemical protective clothing which comprised the major portion of the Army's funding requests for the past 2 fiscal years. (See ch. 6.)

This report also discusses other problem areas GAO identified in the management of the war reserve program together with GAO's views on the corrective actions needed.

Some of GAO's major recommendations to the Secretary of Defense are:

- Limit the Army's war reserve stockage objective to be consistent with the direction given to the Defense Logistics Agency. This means eliminating the residual force requirement. (See p. 25.)
- Direct the Secretary of the Army and Director, Defense Logistics Agency to eliminate wartime safety level factors from equipment computations for stock fund items. (See p. 44.)
- Require the Army to (1) coordinate its airlift requirement with the U.S. Air Force's Military Airlift Command and (2) consider attrition and combat damage to more accurately project wartime flying hours, maintenance personnel, spare parts, and equipment requirements. (See p. 60.)
- Require the Army to limit the total repair cycle time for reparable items to conform to the planning scenario and use more realistic shipping times and distribution methods to compute requirements. (See p. 60.)
- Seek legislation to specifically allow transfer of assets between Defense components to fill high priority prepositioned stock shortages. (See p. 73.)
- Direct the Army to present to the Congress only stock deficiencies on those clothing and textiles managed, controlled, and funded by the Army exclusively and not include the Defense Logistics Agency's other war reserve requirements.

GAO discussed the matters in this report with the personnel from the Office of Secretary of Defense, Army, and the Defense Logistics Agency and incorporated their comments into the report. Defense officials stated a draft instruction was being processed which was expected to standardize the methodology for computing war reserve requirements and was expected to improve the residual force and safety level elements of the computation. However, the officials did not agree to eliminate these levels entirely as recommended by GAO. GAO still believes that the war reserve requirements contain sufficient quantities, as described in the body of the report, to provide adequate support without these additional levels.

Defense officials agreed to:

- Place more emphasis on the stock fund war reserve program; specifically, Defense logistics elements will be required to coordinate and transfer assets to fill priority shortage categories.
- Direct the Army Troop Support and Aviation Materiel Readiness Command to properly consider attrition and combat damage to reduce flying hours, personnel, and spare parts requirements.
- Direct the Army Troop Support and Aviation Materiel Readiness Command to limit the total repair cycle to a specified planning scenario.
- Adopt a mechanism to assure production offsets are made to reduce requirement data before it is presented to the Congress.
- Direct the Army to only reflect Army managed, controlled, and funded requirements and not include the Defense Logistics Agency's other war reserve requirements so as to avoid duplicative data being presented to the Congress in future budget requests.

--Study ways to reduce the resupply times
considering new Army resupply delivery
systems.

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ABBREVIATIONS

ALOC	Air Lines of Communications
DARCOM	U.S. Army Materiel Development and Readiness Command
DLA	Defense Logistics Agency
DOD	Department of Defense
GAO	General Accounting Office
NATO	North Atlantic Treaty Organization
OSD	Office of the Secretary of Defense
OWRMR	other war reserve materiel requirement

CHAPTER 1

INTRODUCTION

The Senate Appropriations Committee asked us to provide information about the Army's stock fund war reserve program and to evaluate the adequacy and reasonableness of the requirements computations the Army used to prepare its fiscal year 1979 budget.

PURPOSE AND CATEGORIES OF WAR RESERVES

War reserve stockage of materiel as a matter of defense policy is a direct result of the United States being virtually unprepared for a surprise attack at Pearl Harbor. Based on post war assessments, military planners concluded that prestocking materiel in peacetime is necessary to successfully engage an enemy in an unexpected assault.

The basic objective of the Department of Defense (DOD) is to be prepared to support national policies and to defend the Nation's security. War reserve stockage requirements are computed based on the Secretary of Defense guidance concerning enemy threats and capabilities throughout the world. A primary element of military readiness is the sound and careful establishment and management of adequate war reserves. Accordingly, each military service establishes and maintains a continuing war reserve program that reflects the policies in the Secretary of Defense's latest guidance.

Army war reserves include "principal items" or major weapons such as tanks, armored personnel carriers, and jeeps. War reserves also include numerous support items referred to as "secondary items" which are not specifically designated as principal items. Secondary items include spares and repair parts and items that are expended when issued and lose their identity. Secondary (support) items are usually designated as appropriation financed if they cost more than \$1,000 or are reparable components that are normally returned to a centralized depot for repair. All items not specifically designated as principal secondary items are financed through stock fund accounts. Under the stock fund concept, items are sold to military customers and the moneys are used to replenish stocks.

The Army has a \$3,579.1 million requirement for stock fund items with assets of \$1,868.9 million. The major portion of the stock fund requirement and deficit (\$1.8 billion and

\$991 million, respectively) are for clothing and textiles. Aviation items account for another \$360 million of the requirement with assets of \$202 million.

Clothing and textiles are financed with stock funds at the central management (wholesale) level. Aviation items are financed with either appropriation or stock funds at the wholesale level.

Army stock fund war reserve materiel is required to support two types of requirements which relate to war or national emergency. The first type is prepositioned war reserves which are supplies positioned (1) as near as possible to the point of potential need and (2) in state-side warehouses to be used as the initial resupply support for forces engaged in combat. General mobilization reserves are supplies which are required to support and sustain the approved forces through the remaining period prescribed in the war materiel planning program.

ARMY WAR RESERVE MANAGERS

Army Support Activity

The Army Support Activity in Philadelphia, Pennsylvania, is the Service Item Control Center for clothing, textiles, tentage, household furnishings, individual equipment, heraldic items, subsistence, and toiletries (nonmedical). The Support Activity manages the major materiel functions assigned to the Army which include (1) new item integration planning, (2) equipment authorization review, (3) cataloging, (4) computation of requirements for contingency plans and general mobilization, (5) review and approval of authorized stockage lists, and (6) complete supply management for all heraldic and other regulated items.

The Army Support Activity also computes war reserve requirements for clothing and textile items. The Activity's parent organization, the U.S. Army Materiel Development and Readiness Command (DARCOM) provides guidance for these computations. The objective of the guidance is to determine the total quantity of each mission essential item required to sustain combat operations for U.S. Army and applicable allied forces throughout a planning scenario.

Major elements of the clothing and textile gross war reserve requirement are (1) initial issue deficiencies,

(2) combat and mobilization training consumption, (3) supply pipelines, (4) operational project requirements, and (5) combat consumption for a specified ally. Once the requirement for an item is determined, the Support Activity computes the required portion to be stocked either in overseas theaters or in prepositioned stateside war reserve programs.

The Department of the Army allocates funds to purchase war reserves for overseas stockage to the overseas commands. The commands own and manage the stocks. The Department also allocates funds to DARCOM to purchase war reserves for stateside stockage. These stocks are managed by the Army Support Activity.

Army Troop Support and Aviation
Materiel Readiness Command

The Army Troop Support and Aviation Materiel Readiness Command (the Aviation Command) in St. Louis, Missouri, manages aircraft spares and repair parts, both appropriation and stock fund financed.

The requirement computations for aircraft repair parts, components, and assemblies are automated (computer programed) calculations. The requirements are based primarily on aircraft densities, projected flying hours, experienced demands from Army customers, engineering estimates, and various program change factors--numbers used to adjust for anticipated demands and returns over the forecast period. After the gross "War Reserve Materiel Requirement" is computed, it is apportioned to overseas and stateside prepositioned stockage levels based on specific days of supply. The remainder of the requirement becomes "Other War Reserve Materiel Requirements."

A Command war reserve dollar value summary, dated June 18, 1977, showed the following for stock fund air items:

War materiel requirement	\$329,230,747
Minus D-Day assumed assets	<u>87,392,205</u>
War reserve materiel requirement	\$241,838,542
Minus overseas prepositioned requirements	<u>26,357,639</u>
War reserve materiel objective	<u>\$215,480,903</u>

The above requirements are for about 13,700 aircraft repair parts, assemblies, and components and about 160 air delivery equipment items (parachutes, straps, and other rigging items).

POSITIONING ARMY WAR RESERVE STOCKS

War reserve programs for the U.S. forces can be categorized geographically as (1) continental United States, (2) overseas theater, and (3) special operational projects which are stored in the United States and overseas theaters. U.S. war reserve stockpiles are contingency type stocks and stocks for reserve component forces. One exception, [deleted] is stored in the continental United States, but it is classified as a [deleted] [deleted]

Another stateside program is called the other war reserve materiel requirement (OWRMR), formerly called general mobilization reserves. OWRMR is the remainder of the total requirement after the prepositioned requirement is determined.

Theater reserve stockages are prepositioned items, expressed in days of supply by class, to support U.S. forces until resupply is established. A brief description of theater reserve programs follows:

--Theater Reserve 1 provides post D-Day support for forces assigned to Europe and reinforcements scheduled to be deployed there.

--Theater Reserve 4 [deleted]

[deleted]

--Theater Reserve 5 [deleted]

[deleted]

--U.S. Army Pacific stocks provide for in-theater forces and scheduled reinforcements.

--U.S. Army Forces, Southern Command, and U.S. Army, Alaska, stockages fall under the auspices of U.S. Army Forces Command, and support the programed forces until resupply is established.

Operational projects are a special authorization for major commands to acquire materiel to support specific operations, contingencies, and war plans in certain geographic areas. Bridging materiel located in Europe is an example of a prepositioned operational project. This materiel is not normally used in peacetime nor is it authorized for issue in peacetime; however, it is required to support NATO defense plans in the event of war. Prepositioned materiel configured to unit sets is also classified as an operational project. These stocks consist of equipment taken away from other Army programs.

Support of allied forces is another aspect of the war reserve program. Currently, two war reserve programs are earmarked for allies. The War Reserve Stocks for Allies program consists of portions stored in the United States, in theaters, and on off-shore bases. The United States owns and controls these stocks, but they may be stored and maintained by the host country with the Secretary of Defense's approval.

The Special Contingency Stockpile is set aside for non-Asian allies based on the October 1973 Arab-Israeli conflict. The program is under U.S. control and stored in the continental United States. Equipment, ammunitions, missiles, spare parts, and other combat essentials are stocked.

CONGRESSIONAL CONCERN ABOUT WAR RESERVES

Over the years the Congress has expressed concern about war reserve requirements. The Senate Appropriations Committee wanted to assure itself that only the most essential items were identified as war reserves, that is, equipment the forces needed most considering the current fiscal environment. The Committee asked us to thoroughly review the Army's war reserve procurement program.

SCOPE OF REVIEW

We made our review at the (1) U.S. Army Aviation Command, St. Louis, Missouri, a subordinate command of DARCOM, (2) U.S. Army Support Activity, Philadelphia, Pennsylvania, an Army Service Item Control Center, also under DARCOM, (3) Army Headquarters, DARCOM, (4) Defense Logistics Agency (DLA), Washington, D.C., and (5) Defense Personnel Support Center, Philadelphia, Pennsylvania, a major subordinate command of DLA.

CHAPTER 2

ARMY WAR RESERVES--THE ISSUES

The Army has a current fiscal year 1978 projected deficiency of about \$1.7 billion in war reserve stock fund items. The major deficiencies are in clothing and textile items (\$991.8 million) and aviation spares and repair parts (\$157.8 million). Such a deficit, if valid, would appear to leave the Army unprepared for an armed conflict. However, the size of the reported deficit depends on a number of factors which if altered to some extent would greatly affect the deficit. A critical factor, for example, is DOD guidance concerning the potential length of the war to be supported and the Army and other logistics components' interpretation of this guidance.

DLA, DOD's purchaser of items, including clothing and textiles common to all services, is limited to a [deleted] day period of support by the Secretary of Defense. In contrast, the Army is planning for at least [deleted] months of additional support beyond the [deleted] day planning scenario period to support the residual force in the combat theater at peacetime rates.

Even if both agencies were planning logistics support for the same period of time, we believe their requirements would be overstated because of the concepts and methods used. The two agencies provide for supply pipelines, safety levels, and other industry production "hedges" which can be eliminated to reduce requirements considerably and still provide adequate support. Finally, the complex interrelationship between the two agencies is causing additional problems in the management of clothing and textile war reserves. For example, the Army is requesting funds from the Congress to fill clothing and textile prepositioned shortages, while DLA has about \$500 million of these same assets in its inventory.

The Army has further complicated matters by the way it has divided responsibility for prepositioned war reserve asset requirements and the control between the overseas commands and Army logistic elements. This practice has resulted in prepositioned war reserve shortages in overseas commands, while U.S. logistic centers have the needed items in their inventories.

HOW VALID ARE THE ARMY WAR
RESERVE REQUIREMENTS?

Interpretation of Department of Defense guidance

Guidance issued annually by the Office of the Secretary of Defense (OSD) is the driving force and the basis for computing war reserve requirements. This annual guidance, the Programming and Planning Guidance Memorandum, causes logistics planners to plan war reserve support of the forces and it is also responsible for many of the current problems in Army war reserves.

Past and current guidance has emphasized supporting the approved forces in Europe and North East Asia, the expected theaters of war. Requirements are computed to support forces in Europe for [deleted] days and to support Republic of Korea and U.S. forces for [deleted] days. In the past, the services have been directed to develop low-cost hedges against a longer conflict.

What constitutes a low-cost hedge is open to interpretation. The Army met the requirement by an additional [deleted] days of supply. Army officials said that the additional stock was needed to "swell the pipeline" to Europe, in other words, to increase the volume of supplies shipped to support the initial wartime surge. We questioned the need for this addition because Army stocks prepositioned in Europe are calculated to support the forces until resupply is established. The Army also indicated that the additional stock was needed to support the residual force at peacetime rates after the [deleted] [deleted] day conflict. The most recent guidance by the Secretary of Defense directs planners to include support for a residual force.

DLA interpreted DOD's war reserve policy to mean an indefinite war and applied the "D to P Concept," with D representing the date a conflict starts and P the date U.S. industrial production matches wartime consumption. In other words, items not immediately available from industry, even past the [deleted] day period, would be prestocked. Apparently, OSD officials did not have this concept in mind because they indicated to DLA that its stockage objectives were overstated and directed it to limit its war reserve stockage period to [deleted] days, even if wartime production could not match monthly

combat consumption rates for months after the [deleted] day period. This direction combined with other actions reduced DLA's clothing and textile requirements by some \$400 million from fiscal year 1978 to fiscal year 1979. The Army is still computing requirements for an additional [deleted] days beyond the planning period.

Funding policies

Although the Secretary of Defense guidance provides for supporting forces on a [deleted] day basis, a recent OSD directive limits procurements of war reserve items to [deleted] days. This directive further instructs DOD components to use funds obtained from the Congress to fill prepositioned war reserve stock shortages. It is important, therefore, that the funds be used to achieve a balanced inventory of items so that shortages in any one category will not seriously jeopardize operations in the initial [deleted] day period.

Both the Army and DLA manage war reserve clothing and textiles. While the Army determines its total war reserve needs for clothing and textiles, it funds and purchases only the quantities required to fill its prepositioned stocks through DLA. The balance of the Army's requirements is included with requirements of the other military services to be purchased with funds obtained by DLA from the Congress or from funds provided by each military service.

The Army's submission to DLA is divided into (1) the war reserve quantities required in the first [deleted] days of the war which are not required to be prepositioned and (2) those required in the second [deleted] days. Included in the first [deleted] day total, however, is the additional [deleted] day pipeline quantity computed by the Army. DLA adds a safety level in support of the Army's [deleted] day requirement and includes it in the first [deleted] day portion.

As we indicate in subsequent chapters, the need for the supply pipeline and safety level quantities computed by both agencies is questionable to begin with and both can be eliminated without seriously affecting supply support. Nevertheless to include these additives in the first [deleted] days of support, which are authorized to

be financed under Secretary of Defense guidance. creates an inflated requirement for funds that can be spent for more critical items. As we also describe later, DLA estimates for U.S. industry production deliveries are based on extremely conservative estimates with a minimum of deliveries anticipated in the first deleted days. The combination of inflated requirements on the one hand and conservative anticipated deliveries from industry in the first deleted days inflates projections of the quantities that will have to be purchased and on hand at the start of an emergency.

We also identified other Army concepts increasing requirements that need to be reassessed. For example, the Army's Aviation Command, St. Louis, Missouri, manages aviation spares and repair parts. The estimated wartime flying hours flown by Army helicopters may have been overestimated. This is significant because spare parts and maintenance needed to support a wartime surge activity are based on the estimated wartime flying hour program. The Army Aviation Command is planning to support a large fleet of helicopters that will be in the United States at the start of the war. The Army Aviation Command has not coordinated this plan with the Military Airlift Command to determine if all the C-5 aircraft needed to haul these helicopters will be available. The longer the delay in committing these helicopters to action under the planned scenarios, the less spare parts will be needed. We also found that estimated aircraft attrition was not adjusted correctly in the flying hour calculation. This and other topics are discussed in chapter 5.

Interagency problems

The validity of Army war reserve requirements is affected by the complex interrelationship between the Army and DLA. The Army purchases the prepositioned stock portion and DLA purchases the remainder for clothing and textiles from funds made available by the Congress or by the services. If the Army decides to increase its prepositioned stock levels, it seeks appropriations from the Congress separately even though DLA has a sizable inventory of the same items. Thus, while the Congress is appropriating funds to fill shortages in Army's high priority prepositioned stocks, it may not be aware of the total asset picture represented by the combined inventories of the two agencies.

Furthermore, the Army's war reserve deficiencies submitted to the Congress, includes its other war reserve requirements submitted to DLA for funding. Duplicate data submitted to the Congress on the war reserve requirements and shortages in fiscal year 1978 by both agencies included the same items and made the situation appear worse than it really was. In fact, the Army's projected shortages are inflated because they are not reduced by the estimates of industry deliveries developed by DLA. Finally, because DLA is a stock fund operation, the Army must purchase any stocks from DLA to fill its prepositioned shortages. Thus, while it is more advantageous from a readiness standpoint to have more DLA assets included in Army prepositioned stocks, the transfer cannot be made under the current system because the Army lacks sufficient funds.

A viable alternative to requesting congressional funding to purchase prepositioned deficiencies would be for DLA to issue war reserve assets in excess of [deleted] days to military customers for peacetime use and to purchase critical shortages of other items with these funds to achieve a balanced war reserve posture of [deleted] days for all classes of supply. Also, to achieve a more balanced inventory of items, DLA should be encouraged to transfer items from its inventory to fill prepositioned categories.

The following chapters describe the problems outlined thus far in more detail. They also describe differences in opinion between Army headquarters and its overseas commands as to the actual essentiality of items selected for prepositioned stocks and other problems we have identified suggesting that the Army and DLA need to refine their methods to determine logistics requirements. Since these stockages are necessary war reserves, we believe the program needs additional management emphasis.

CHAPTER 3

LACK OF SPECIFICITY IN OSD GUIDANCE

CONFUSES LOGISTICS PLANNERS

The Secretary of Defense's current Planning and Programming Guidance Memorandum instructs DOD components to compute logistic support for U.S. forces for a planned scenario length ([deleted] months). However, the lack of specificity in the defense guidance allows DOD components to interpret how much more logistic support may be needed over the planned scenario length. The language in the past guidance directed the services to provide low-cost hedges against the possibility of a longer conflict.

This has had a profound impact on war reserve requirements for stock fund items. For example, based on its interpretation of the guidance, DLA used the D-to P-concept 1/ and computed fiscal year 1978 requirements for secondary stock fund items beyond the [deleted] day planning scenario. Under this concept, sufficient stock levels are computed and purchased to sustain operations until industrial production is equal to wartime monthly production. However, OSD officials considered the total item quantity and dollar requirement for DLA stockage was overstated and directed DLA to limit war reserve requirements to [deleted] [deleted] months or P-Day, whichever comes first. DLA changed its computational procedures for computing fiscal year 1979 stock fund war reserve requirements to agree with OSD's indicated direction. This action combined with a management decision to eliminate the safety level for one item reduced the total clothing requirements by \$400 million.

Because of OSD guidance language concerning low-cost hedges, the Army is also computing war reserve requirements for secondary stock fund items beyond the [deleted] day planning scenario. The Army Support Activity's computational methodology includes a pipeline factor to support the residual force expected to be in the NATO combat theater at the end of the [deleted] month planning scenario for a period of [deleted] days. The concept of

1/D is the day hostilities begin and P is the day production equals wartime consumption.

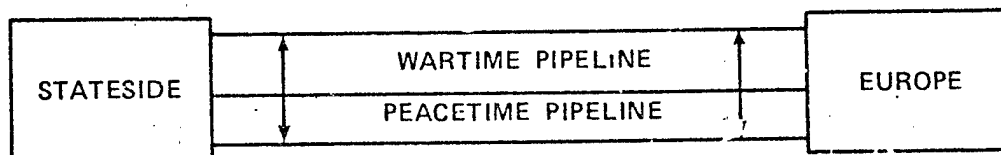
supporting a residual force at peacetime rates is inconsistent with direction already given to DLA to limit requirements to [deleted] months or P-Day, whichever comes first. Moreover, a pipeline factor is not used for the North East Asia scenario.

The Army's Aviation Command, responsible for aviation spare and reparable parts, also includes a pipeline factor in its war reserve requirement computations for secondary stock fund items. The logic given--to support the residual force expected to be in the NATO combat theater at the end of the planning scenario for [deleted] days--is the same as the Army Support Activity.

The pipeline factor affected both the total quantity and dollar requirement required for war reserve stockage at two Army subordinate commands we visited. For clothing and textile items, the pipeline factor totaled \$111.6 million of the \$478 million Army war reserve materiel requirement submitted to the Defense Personnel Support Center for the first 3-month mobilization surge. The pipeline requirement totaled \$667,048 for 6 aviation items we reviewed.

ARMY'S NEED FOR A [deleted]
DAY STOCK REQUIREMENT BEYOND
THE PLANNING PERIOD IS QUESTIONABLE

The [deleted] day pipeline factor is obtained by adding the European prepositioned stockage objective ([deleted] days of supply at wartime consumption rates) to the mid-range of the resupply time of 55 days (resupply times being 45 to 65 days for Europe). Army officials explained to us that before a war begins, the amount of materiel in transit between Europe and state-side can only satisfy peacetime needs. If a NATO war should occur, the peacetime pipeline must "swell in size" before sufficient materiel can be delivered to Europe to match intense wartime consumption. The [deleted] day pipeline is designed to support an expanded force structure. It can be graphically displayed as follows:



The amounts of wartime pipeline are equal to peacetime amounts plus additional materiel to match intense wartime consumption in Europe.

We agree that the peacetime pipeline must "swell in size" before sufficient materiel can be delivered to Europe to match intense wartime consumption. However, the Army has already provided enough time to "swell" the pipeline by prepositioning war reserve materiel in Europe. Since the Army is required to preposition deleted days of supply in Europe (deleted day stockage objective plus a deleted day safety level at wartime consumption rates), it has created, in effect, a deleted day wartime pipeline of available materiel to be used until resupply from stateside can be established. Since the mid-range of the resupply time to Europe is 55 days, a continual flow of materiel from stateside will match intense combat consumption in Europe by D+55. The Secretary of Defense's Planning and Programing Guidance Memorandum states that prepositioning requirements (deleted days of supply) are computed on the assumption that assets in stateside will start flowing toward Europe on D-Day.

If materiel is not prepositioned in theater, the combat forces would simply be out of stocks until resupply from stateside is accomplished. As mentioned previously, the pipeline or the time required to send supplies from stateside to the military user dictates the amount of stocks required to be prepositioned in the combat theater until resupply can be established.

Including an additional deleted days of materiel for pipeline increases the length of time that combat forces in Europe can be supported. Thus, since

wartime consumption is computed for a [deleted] day planning period, an additional [deleted] days of materiel for pipeline provides logistic support of operations for a [deleted] day period. DOD should eliminate this requirement and adjust the airlift and searift requirements accordingly to allow critical lift resources to be used elsewhere.

Pipeline factor is to support combat forces beyond the planning scenario

War reserve officials described another purpose for the pipeline factor. They said the Secretary of Defense guidance states that secondary item war reserve requirements to support Europe should ensure a residual capability at [deleted] which should continue to support those U.S. forces in NATO at [deleted] at peacetime consumption rates, in addition to satisfying the other worldwide demands in the guidance.

Current Secretary of Defense guidance requires DOD components to compute logistic support requirements for a [deleted] day planning scenario. However, the Secretary of Defense has instructed DOD components to procure war reserves for only the first [deleted] days of this scenario. The logic for achieving this objective is based on the amount of funds DOD can expect to receive in the next 5 years and the belief that having [deleted] days of supplies for all materiel categories is better than having [deleted] days of supply for 1 class of supply and only [deleted] days of another.

THE EFFECT OF INCLUDING A PIPELINE FACTOR IN CLOTHING AND TEXTILE REQUIREMENT COMPUTATIONS

The Army Support Activity in Philadelphia, Pennsylvania, an Army Service Item Control Center, computes war reserve materiel requirements for clothing and textile items. The Support Activity computed a gross Army war reserve materiel requirement of \$1,743 million for these items for fiscal year 1979. The gross requirement included a pipeline factor of \$111.6 million.

The Support Activity adds the entire pipeline amount to the forecasted initial issue deficiencies and combat and mobilization training consumption needs for the first [deleted] months after D-Day. The Support Activity subtracts from this [deleted] month requirement, the necessary stocks to comply with Army prepositioned war reserve needs. Army funds are used to purchase prepositioned stocks in Europe and the United States. The remaining requirement, generally including the pipeline amount, is forwarded to the Defense Personnel Support Center for procurement as part of the OWRMR category. Along with this requirement, the Support Activity also submits the total Army's clothing and textile needs for the second [deleted] months of the planning scenario and requirements for allied forces for the first [deleted] months and after D-Day.

Including the pipeline amount as part of the OWRMR submitted to the Center for the first [deleted] months after D-Day, caused the first [deleted] day requirements to be much greater than what the Army has actually computed to satisfy initial issue deficiencies and combat and mobilization training consumption needs. An alternative to this practice would be for the Army to allow producers to supply the required pipeline items, through accelerated production, to support the residual force at the end of the planning scenario. This alternative would decrease the amount of items to be stocked as war reserves.

The Secretary of Defense has instructed DOD components to procure the first [deleted] days of the total [deleted] day war reserve requirement. Since the pipeline factor is submitted to the Center and is generally included in the first [deleted] days, the pipeline quantity is eligible for procurement.

PIPELINE METHOD ILLUSTRATED--
CHEMICAL PROTECTIVE FOOTCOVERS

Major elements of the war reserve requirement computation for clothing and textile items include (1) initial issue deficiencies, (2) combat and mobilization training consumption, (3) pipeline, (4) operational projects, and (5) combat consumption for a specified ally. The pipeline factor is computed based on the troop density at [deleted] [deleted] of the NATO scenario times the mobilization training rate times [deleted] days.

An example of the Army's computation for chemical protective foot-covers follows:

Chemical Protective Footcovers
Army Support Activity Computation
Fiscal Year 1979

	<u>Months</u> D-Day to
	deleted
	(quantity)
	deleted
Army requirement	
Plus pipeline quantity--	
to support residual	
force at end of plan-	
ning scenario	
Total gross army	
requirements	
Less peacetime	
pipeline	
Less prepositioned	
requirements	a/deleted
stateside and	
overseas	
Net Army requirement	
to Defense Personnel	
Support Center	
Allied combat and	
mobilization	
training	
consumption-D-Day to	
deleted	-
Total requirement sent	
to Defense Personnel	
Support Center	b/deleted

a/The Army Support Activity manages, controls, and procures stateside prepositioned war reserves. Overseas commands manage, control, and procure overseas prepositioned war reserves.

b/This requirement includes deleted units for pipeline to support the residual force at the end of planning scenario. If this factor was not added, only deleted units would be sent to the Center as the deleted month's requirement.

The Army Support Activity submitted its first and second requirements ([] deleted) units, respectively) to the Center for procurement. The Center takes the first [] deleted [] day requirement and phases it in equal increments of [] deleted units for the months [] deleted . The Center also phased the second [] deleted [] day requirement into equal increments of [] deleted units for the months [] deleted as shown below.

Defense Personnel Support
Center Computation Chemical
Protective Footcovers Fiscal Year 1979

War materiel
 requirement

deleted
deleted

Although the Army's stated logic for adding the pipeline factor is to support the residual force expected to be in the combat theater at the end of month [] deleted , the pipeline quantity ([] deleted [] units) is reflected in the first [] deleted months after D-Day and eligible for procurement.

Since the total pipeline amount for all items computed by the Army Support Activity was included in the first [] deleted [] day requirement, the Army, as well as the Center, overstated the amount of stockage required for the first [] deleted [] day increment by about \$111.6 million. The following chart shows one of several factors (see chs. 3, 4, and 5 for others) contributing to the Army's sizable war reserve request submitted to the Center for the first [] deleted months.

Defense Personnel Support Center
Clothing and Textile deleted day
 OWRMR Fiscal Year 1979

	Requirement <u>D-deleted</u>	Applicable assets <u>D-deleted</u>	Deficiency <u>D-deleted</u>
(in thousands)			
Army	\$613,963	\$395,691	\$218,272
Air Force	14,529	7,461	7,068
Navy	67,941	14,141	53,800
Government furnished materiel	<u>47,372</u>	<u>34,643</u>	<u>12,729</u>
Total	<u>\$743,805</u>	<u>\$451,936</u>	<u>\$291,869</u>

As indicated previously, the Army's \$218 million deficiency is eligible for procurement because it falls within the Secretary of Defense's time frame of limiting procurement of war reserves to the first deleted days. But, the stated justification for the pipeline is to support the residual force at the end of the planning scenario.

No chance for production
capability to be used

War reserve stocks available on D-Day must be adequate to meet the demand until sufficient deliveries are received from production. DOD has an Industrial Preparedness Planning program which evaluates the private sector's ability to produce and meet military requirements during wartime. The more quickly deliveries can be made from industry in the post D-Day period, the lower the stockage needed on D-Day.

To determine the effect of post D-Day production on the Center's computations, assume that post D-Day deliveries from industry can meet the total Army requirements for the chemical protective footcovers at deleted units). This means that war reserve stocks

would only have to be procured for the first [deleted] days. Industry could meet any needs after D+90, including support of a residual force in the combat theater after [deleted] months.

The pipeline quantity is included in the Center's requirements for the first [deleted] months after D-Day. This practice erases the opportunity for planned producers to supply the items required to support the residual force at the end of the planning scenario through accelerated production and also increases the number of items and dollar investment in war reserves.

PIPELINE FACTOR INCLUDED IN
REQUIREMENT COMPUTATIONS FOR
AVIATION ITEMS

The Troop Support and Aviation Materiel Readiness Command, St. Louis, Missouri, is responsible for aviation spares and reparable parts. The Command also includes a pipeline factor in its war reserve requirement computations for stock fund items. The reason for including this factor is the same as the Support Activity's--to support the residual force expected to be in the NATO combat theater at the end of the planning scenario for [deleted] days.

The amount is derived by multiplying the average monthly peacetime demand by [deleted] months times a change factor which recognizes that the peacetime flying hour program will be at a higher or lower level on the day the war begins. The number of pipeline months is the same for both consumable and reparable items-- [deleted] days.

The pipeline quantity obtained from the above formula is added to the total consumption quantity computed for the [deleted] day NATO planning scenario. Thus, in theory, the pipeline quantity of spare parts would be on hand at the end of the planning scenario to support major end items for a period of [deleted] days at peacetime flying hour rates. We question both the need for the additional [deleted] days and the use of a peacetime flying hour program after the scenario, which is based on a pre-D-Day force structure. It would seem more reasonable to base such additional support, if needed, on the force density at the end of the scenario as is done

with clothing and textile requirements at the Army Support Activity.

Reduction in aviation items
possible by eliminating pipeline quantity

As shown below, the pipeline factor adds \$667,048 to war reserve requirements for 6 items we selected for review.

Reduction in War Reserve Materiel
Requirements by Eliminating Pipeline Quantity

<u>Item</u>	<u>Aircraft application</u>	<u>Number</u>	<u>Unit cost</u>	<u>Total value</u>
Cap, corner Strap	UH-1M, UH-1H	631	\$ 2.21	\$ 1,394.51
assembly	AH-1G, TH-1G AH-1S, UH-1M	19	506.00	9,614.00
Adapter assembly	AH-1S	397	58.86	23,367.42
Filter element	AH-1S, OH-58C OH-58A	151	26.85	4,054.35
Blade assembly	AH-1G, TH-1G AH-1S, UH-1M	69	7,722.00	532,818.00
Fitting	AH-1S	100	958.00	95,800.00
Total		<u>1,367</u>		<u>\$667,048.28</u>

The Aviation Command computes war reserve materiel requirements for about 13,700 air items. Eliminating the pipeline factor can significantly reduce the total item quantity and dollar value required for war reserve stockage.

OSD LIMITS DLA
TO A [deleted]
DAY STOCKAGE OBJECTIVE

DLA fiscal year 1978 guidance to its subordinate elements directed them to compute requirements to the day when production is expected to equal consumption. However, in February 1977, OSD officials (Manpower, Reserve Affairs, and Logistics) instructed DLA to compute war reserve requirements to [deleted] months or production day, whichever was expected to occur first. The use of the

DLA fiscal year 1978 guidance resulted in higher war reserve requirements than would have been computed had the fiscal year 1979 instruction been applied. The effect of the changed criteria is indicated by comparing the Center's fiscal year 1978 requirement for clothing and textile reserves--\$1.8 billion--to its fiscal year 1979 requirement of \$1.3 billion.

DLA guidance for computing fiscal year 1978 war materiel requirements stated that the D- to P-concept applied to all items, planned or nonplanned. Planned items are furnished to Industrial Preparedness Planning personnel for determination of anticipated receipts from D-Day initiated procurements. For planned items, P-Day is at the first of the month during which the rate of production equals or exceeds, at a continuous rate, wartime consumption. For nonplanned items, where wartime production leadtimes have not been developed, P-Day is at the end of the peacetime production leadtime.

Using the D- to P-concept to compute war reserve requirements increases the number and dollar value of items required for war reserve stockage. This is because the production leadtimes can exceed the planning scenario for nonplanned items or production does not equal wartime consumption for a planned item until after the planning scenario. For example, the Army Support Activity computed clothing and textile war reserve requirements based on a [deleted] day scenario. After the Support Activity subtracted the Army prepositioned war reserve needs, the balance of the requirement was submitted to the Center. If the item was a planned item and wartime production did not equal wartime consumption until month [deleted] after D-Day, use of the D- to P-concept would mean that war reserve stocks would have to meet all demands less peacetime assets on hand at D-Day, orders placed before D-Day, and post D-Day receipts from production for [deleted] months after D-Day. For a nonplanned item with a peacetime or wartime production leadtime of [deleted] months, war reserve requirements using the D- to P-concept would be computed for [deleted] months.

The Center's report to DLA for fiscal year 1978 using the D- to P-concept showed the following.

	FY 78 program	FY 79 program	Difference FY 78 minus FY 79
	(in millions)		
War materiel require- ments submitted by service through			
deleted:			
Army requirements through deleted	\$1,158	\$1,054	\$-104
Navy requirements through deleted	46	127	+81
Air Force requirements through deleted	44	49	+5
Government furnished materiel D to P (FY 78) through deleted	157	53	-104
months (FY 79)			
Total requirements	<u>\$1,405</u>	<u>\$1,283</u>	<u>\$-122</u>
Computation of OWRMR:			
Total services require- ments to P Day (FY 78)			
deleted			
months or P Day which- ever comes first (FY 79)	\$1,500	\$1,192	\$-308
Post D-Day safety level	320	164	-156
Total requirements	<u>\$1,820</u>	<u>\$1,356</u>	<u>\$-464</u>
Less:			
Peacetime assets	\$231	\$ 235	\$-(+4)
Anticipated post D-Day deliveries from suppliers	253	158	-(-95)
Approved commercial alternate items	-	27	-(+27)
Total OWRMR	<u>\$1,336</u>	<u>\$936</u>	<u>\$-400</u>

	FY 78 program	FY 79 program	Difference FY 78 minus FY 79
(in millions)			
Computation of deficiency:			
Total OWRMR	\$1,336	\$936	\$-400
Less war reserve stock	<u>503</u>	<u>524</u>	<u>-(+21)</u>
Deficiency	<u>\$ 833</u>	<u>\$412</u>	<u>\$-421</u>

The effect of the Center computing war reserve requirements for clothing and textile items using the D- to P-concept can be seen from the above table. The Center computed \$1,500 million of total services' requirements to "P" day, while the services submitted requirements of \$1,405 million for deleted months. If the Center had limited requirements to deleted months for nonplanned items, with production leadtimes in excess of deleted months, and only considered post D-Day receipts from production during the first deleted months after D-Day for planned items, total services' requirements to "P" day would be less than what the services submitted.

Effect of change directed by OSD

DLA changed its fiscal year 1979 guidance to agree with the Secretary of Defense fiscal year 1979-83 Planning and Programing Guidance and to limit requirements to deleted months or P-Day, whichever comes first. This revision had a substantial impact on the Center's war reserve materiel requirement. Limiting war reserve requirements to deleted months or P-Day, whichever comes first, rather than computing requirements using the D-to P-concept, significantly reduced the total amount and dollar value of items the Center is required to stock for war reserves. A more detailed discussion demonstrating the effect of eliminating safety level and limiting requirements to deleted months is in chapter 4.

Since DLA guidance for fiscal year 1978 directed its subordinate elements to compute war reserve requirements using the D- to P-concept, it is reasonable to assume that all the Center's war reserve requirement amounts were significantly overstated.

CONCLUSIONS

The lack of specificity in the OSD guidance is causing DOD components to interpret and adapt the logistic guidance to their own requirement determination methods. For example, the Army includes a [deleted] day pipeline factor in its requirement computations to support the residual force expected to be in theater at the end of the planning scenario. The guidance, however, is not specific on how much or how long any additional support beyond the planning scenario should be provided.

The Army Support Activity computes the pipeline quantity based on the number of troops estimated to be in the combat theater at the end of the planning scenario. The Aviation Command computes the pipeline quantity based on its pre-D-Day flying hour program, rather than a flying hour program developed for expected force density at the end of the scenario. Consequently, the Army does not have a consistent basis to develop a pipeline factor.

The language in the past guidance instructed DOD components to compute war reserve requirements for a [deleted] day planning scenario, but it also stated that logistic planning should provide low-cost hedges against the possibility of a longer conflict. Procurement of war reserves, however, is now limited to the first [deleted] days. The addition of the pipeline element to the first [deleted] day increment not only inflates the requirement, but it also makes this amount eligible for procurement.

Ambiguities in the guidance confused logistic planners and caused higher war reserve requirements. DLA has changed its procedures to compute requirements for [deleted] months or production day, whichever comes first. Therefore, the Army's basis for pipeline is questionable. We believe the pipeline should be eliminated from Army requirement calculations. This action would be consistent with OSD guidance directing DLA to limit requirements to [deleted] months or P-Day, whichever comes first.

RECOMMENDATIONS

We recommend that the Secretary of Defense limit the Army war reserve stockage objective to [deleted] days to be consistent with the direction given to DLA. This means eliminating the residual force requirement.

AGENCY COMMENTS AND OUR EVALUATION

We met with OSD, Army, and DLA officials on August 7, 1978, to orally discuss our report recommendations. We evaluated their comments and where appropriate included them in the report text.

DOD officials did not agree that the Army's war reserve stockage objective was inconsistent with the direction given to DLA, since provision for a residual force factor is provided for in the planning guidance. They view elements such as consumption, mobilization surge, and residual force quantities as an aggregate requirement to support the forces in war. Since the total Army requirement is forwarded to DLA in a lump sum to be provided in the first [deleted] days, it is construed as a support requirement which agrees with the planning guidance limitations of a specified support period.

In other words, while the critical need is to support our forces in the first [deleted] and to identify essential items to sustain that effort, it is appropriate in their view to add to that requirement an additional [deleted] of supply to support a residual force. The larger the requirement for the first [deleted], the more DLA has to rely on prestocking items instead of accelerated production from industry.

This concept also does not recognize the potential for repairing numerous items that are calculated to support the peak period in the [deleted] scenario. As the level of combat diminishes, the spares available from repair should exceed the requirement for a peacetime residual force.

Rather, than recognize the accelerated production and repair, OSD is allowing the Army to include an extra [deleted] of supply in the first [deleted] requirement with significant portions being loaded in the first [deleted]. The first [deleted] under OSD guidance, is eligible for purchase. On the other hand, if the added quantities are not to support a residual force, but to support a mobilization pipeline, the quantities will still be unnecessary because of stocks prepositioned in Europe, and reduced resupply times brought about by new Army delivery systems. Moreover, Army officials indicated the [deleted] of supply requirement for a pipeline

was developed based on experience before the direct supply support and air lines of communication systems. Now that these systems are functioning, the Army is studying the degree of change that can be applied to reduce the pipeline time.

In our view, therefore, the guidance is still inconsistent and the Army's residual force requirement can be eliminated.

CHAPTER 4

SUPPLY LAYERING PRACTICES CONTRIBUTING TO THE ARMY'S SIZABLE CLOTHING AND TEXTILE WAR RESERVE DEFICIENCY

The military services estimate the quantities of clothing and textile war reserve items needed to support their forces in a deleted day scenario. Additional requirements are submitted to the Center. The Army's estimates exceed normal peacetime usage rates to compensate for previous combat replacement experience, anticipated surge for mobilization training, and the potential use of military drafts. The Center applies an additional post D-Day safety level factor to the estimates to account for minor interruptions in supply and includes the total safety level amounts as assets to be available in the first month after D-Day.

The more the services' initial estimates are increased, the less chance there is to fill a good portion of the requirement with peacetime assets and normal peacetime deliveries from industry. Also, since the total safety level amount is included in the first month's requirements, planned producers have little opportunity to supply the items through accelerated production.

The Center's safety level for clothing and textile war reserves totaled \$164 million for fiscal year 1979. Safety levels comprised a sizable portion of the requirements for certain clothing and textile items.

For example, the post D-Day safety level computed for one clothing item, the chemical protective suit, constituted \$119 million of the total fiscal year 1978 post D-Day safety level of \$320 million. DLA instructed the Center to eliminate the safety level amount for this item and to review other high dollar value safety levels to verify its need.

The Secretary of Defense has instructed all DOD components to compute and procure only the first deleted days of the total deleted day war reserve requirement. Since the entire fiscal year 1979 safety level of \$164 million for clothing and textile items is added to requirements for the first month after D-Day, the total

quantity is eligible for procurement under the new guidance directive. The Center and Army Aviation Command post D-Day safety levels can be eliminated as a prestocked war reserve. The Army calculations already include consumption and mobilization quantities for the initial surge, and industrial suppliers should be able to meet any incremental need in later months through accelerated production.

ARMY CALCULATIONS ALREADY PROVIDE ENOUGH
CLOTHING AND TEXTILE ITEMS FOR COMBAT
CONSUMPTION AND MOBILIZATION TRAINING

In computing the Army's gross war reserve requirements for clothing and textile items, the Army Support Activity estimates (1) initial issue deficiencies, (2) combat and mobilization training consumption, (3) supply pipelines, (4) operational project requirements, and (5) combat consumption for a specified ally. Combat and mobilization training replacement factors are applied to troop strengths according to the combat and training months anticipated in the scenario.

Established replacement factors for clothing and textile items required for mobilization planning are published in Army Supply Bulletin 10-496. The most recent edition of this bulletin, dated November 1972, lists active and inactive replacement factors for 175 generic clothing and footwear items. The active factors are applicable to combat areas, and the inactive factors are applicable to training, both overseas and in the continental United States. The active and inactive factors are listed by climatic zone; a stateside training factor, which is generally used as the mobilization training replacement factor, is also listed with the inactive factors. The Army Support Activity is responsible for maintaining and updating mobilization replacement factors. Mobilization training rates are normally higher than peacetime experiences. Combat consumption rates are based on World War II, Korea, and the Berlin buildup experiences. In other words, when the Activity computes and passes these requirements to DLA, they already include quantities intended to meet combat needs for the planning scenario. As described later in the chapter, DLA adds a safety level to these requirements.

Requirements for expected inductees

At present, no organization or only a skeletal selective service system exists to process inductees in the event of war. The Army Support Activity computes requirements for certain clothing and textile items in anticipation that a

certain number of inductees will be available from the draft at the beginning of hostilities. For 28 of 50 items (56 percent) sampled, requirements were computed for persons expected to be immediately available from the induction centers. DOD said that it needs 100,000 people by 60 days after mobilization, but the Selective Service says it will need 125 days before it can provide that many people. Yet clothing and textile war reserve requirements are computed based on the expectation that numerous personnel will be available from the draft immediately after the war begins.

Requirements computed for clothing and textile item quantities for initial issue deficiencies and mobilization training requirements for expected draftees during the first month of war provide additional war reserves.

Clothing and textile requirements for allies

The Materiel Policy and Guidance for secondary items, published by DARCOM authorizes requirements for allies to be included in war materiel requirement computations. Requirements for the Republic of Korea are included in the requirement computations for those items for which Korea has expressed an interest. Of the 216 generic clothing and textile items for which war materiel requirement studies were made during 1977, about 55 items were designated as items of interest to Korea.

The Army Concepts and Analysis Agency, in its January 1975 study of the war reserve program, questioned the rationale for including allied requirements for major equipment and components in gross war reserve requirements because the practice appeared to assume that allies had no war reserve programs of their own. This same rationale could be applied to clothing and textiles. Further, an Army assessment of allied manufacturing capability, dated September 24, 1976, concluded that Korea can manufacture all its necessary clothing and related equipment. The Republic of Korea's policy for its defense industries is to move toward self-sufficiency.

Army logistics officials indicated that the Republic of Korea's clothing and textile requirements usually consist of tents, packs, shoulder straps, and ammunition cases. Our sample of items indicated that such items as socks, shirts, and blankets are also required by Korea even though they should be available from Korean industry.

THE DEFENSE PERSONNEL SUPPORT CENTER ADDS
SAFETY LEVELS TO THE ARMY'S INITIAL
REQUIREMENTS FOR CLOTHING AND TEXTILES

The Army Support Activity divides gross war reserve requirements for each clothing and textile item into two [deleted] month increments. The Support Activity subtracts from the first [deleted] month requirement the necessary stocks to comply with Army prepositioned war reserve needs. The remaining requirement is forwarded to the Center for procurement as part of the OWRMR category. The Support Activity also submits the total Army clothing and textile needs for the second [deleted] months of the planning scenario and all requirements for allied forces for the first [deleted] months after D-Day.

The Center phases into equal increments for the months [deleted] the war reserve stockage requirements that the Army shows as not requiring to be prepositioned for the first [deleted] days of combat. The Center also phases in equal increments for the months [deleted] for the second [deleted] day requirement. A post D-Day safety level is added to the first month's requirements.

The post D-Day safety level quantity is determined by using the larger of two estimates. The first estimate is the item's average monthly peacetime forecast (quantity of items due in monthly from peacetime production) times the number of peacetime safety level months. The second amount is the estimated consolidated service requirement for the [deleted] month of war times the number of peacetime safety level months. Projected peacetime inventory assets (peacetime safety level and operating stocks) are deducted from the first month's requirements and projected deliveries of peacetime orders are deducted from the first and succeeding months' requirements. The remaining quantity needed for each month after subtracting deliveries from planned producers is the quantity that should be stocked as war reserves. As indicated in chapter 3, the first [deleted] day requirement also includes the pipeline factor. An example of a Center computation for a selected item follows.

Example of Defense Personnel Support Center's Computation
of War Reserve Requirement for a Clothing Item

WMR--Military services consolidated requirements

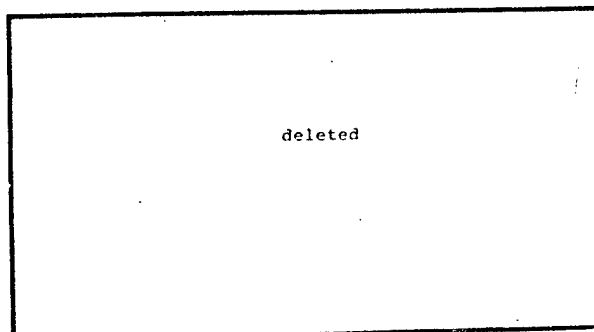
Gross requirement--WMR plus post D-Day safety level

Expected assets--Peacetime safety level plus one-half operating level plus expected assets due-in from pre-D-Day contracts

WMR-Net--Gross requirement minus expected assets

WMPC--Expected assets from post D-Day production

Over (Short)--WMR-net minus WMPC



a/For the above example, the post D-Day safety level is equal to deleted units deleted times deleted peacetime safety level month). The total safety level quantity is added to the first month's requirement.

As shown in the chart, most of the first month's requirement is for a safety level. Under OSD's guidance, this amount is eligible for procurement.

The Center's adjustments to the services' war materiel requirements, using the post D-Day safety level increased the need for prestocking war reserve items. Graphically, it looks like this.

**COMPARISON OF THE CENTER'S COMPUTED WAR RESERVE REQUIREMENT
& SERVICE SUBMITTED REQUIREMENTS FOR CLOTHING & TEXTILE ITEMS
FISCAL YEAR 1979
(\$ MILLIONS)**

REQUIREMENTS		ASSETS		
SERVICE REQUIREMENTS	\$1,192	PEACETIME ASSETS ON HAND AND DUE IN	\$235	ASSETS ON HAND \$944
		POST D-DAY DELIVERIES FROM SUPPLIERS	158	
		COMMERCIAL ALTERNATE ITEMS	27	
		WAR RESERVES ON HAND	524	DEFICIT 412
		SHORTFALL	248	
CENTER REQUIREMENTS	\$164	TOTAL DEFICIT	\$164	
\$1,356		TOTAL		\$1,356
SAFETY LEVEL \$164				

Eliminating post D-Day safety level for one item significantly reduced acquisition objective

Use of the D- to P-concept was particularly noticeable for an item such as the chemical protective suit, for which the Center showed a war reserve requirement of \$435.5 million. Of this amount, \$122 million was for subsequent periods after the first deleted months. The Center also computed a post D-Day safety level for this item of \$118 million.

Center officials explained that the large safety level is due to the shift in Army requirements from the first [deleted] months to the second [deleted] month period. DLA's prescribed method for computing safety levels for wartime is based on the [deleted] month requirement times the number of safety level months used for peacetime requirements. The Army indicated that the apparent shift in requirements was actually a new authorization to compute support requirements in the second [deleted] month period for units which had previously not been authorized. This had the effect of making the second [deleted] month requirement larger than the first 3-month requirement.

DLA requested its Center to eliminate the post D-Day safety level for the chemical protective suit and to review other high dollar value safety levels to verify its need. Also, per OSD instructions, DLA limited fiscal year 1979 requirements to [deleted] months or P-Day, whichever comes first.

Post D-Day safety level included in the Center's [deleted] day procurement objective

As mentioned in chapter 3, the Secretary of Defense has instructed DOD components to procure war reserve materiel for only the first [deleted] days of the [deleted] day planning scenario. Because of this program change, DLA asked the Center to provide it with the dollar value of the [deleted] day OWRMR, applicable war reserve assets, and funding deficiency for clothing and textile items, both by system total and by individual service. This data is shown on the following page.

Clothing and Textile Fiscal Year 1979 War Reserve
Requirements for [deleted] day
War Reserve Requirement

Requirement Applicable assets Deficiency
[deleted]

—————(in thousands)—————

Army	\$613,963	\$395,691	\$218,272
Air Force	14,529	7,461	7,068
Navy	67,941	14,141	53,800
Government furnished materiel	<u>47,372</u>	<u>34,643</u>	<u>12,729</u>
Total	<u>\$743,805</u>	<u>\$451,936</u>	<u>\$291,869</u>

The total dollar value of the above [deleted] day requirement includes the post D-Day safety level which the Center adds to the services' first month's requirements. Eliminating the post D-Day safety level amounts for all war reserve items would reduce the Center's [deleted] day war reserve deficiency and procurement objective by approximately \$164 million.

The Center's war reserve assets are currently valued at \$524 million. The difference between this figure and the \$452 million in the above table is \$72 million. The \$72 million represents an investment in stocks which are in excess of the services [deleted] day other war materiel needs. To achieve a more balanced war reserve stockage position, items which are in excess of the first [deleted] day needs could be sold (i.e., issued from the Center's stock fund accounts for peacetime use and the funds so generated used to procure other [deleted] day critical item deficiencies).

SAFETY LEVELS FOR
AVIATION ITEMS

A safety level is added by the Center for clothing and textile items, after receiving the Army's requirements. The Aviation Command, the single item manager for helicopter spares and repair parts, also includes a wartime safety level in its war reserve requirement computations for stock fund items.

The Secretary of Defense has instructed service components to compute logistics support for a [deleted] day period. The Aviation Command computes requirements to support helicopter operations for a [deleted] day period based on an estimated flying hour program. Added to these requirements is a safety level.

We discussed the logic of including the safety level with a responsible Aviation Command official. He stated (1) the wartime safety level serves the same function as the pipeline factor and that whatever quantity is computed for a wartime safety level would, in theory, be on hand at the end of the planning scenario and (2) that if the pipeline factor is eliminated from the requirement process, then the wartime safety level should also be eliminated. Since logistics support is limited to [deleted] days and the Secretary of Defense has limited procurement to [deleted] days, we believe it is unrealistic to add a safety level to the [deleted] day quantity.

The safety level computation is based on the average number of assets lost each month to the supply system in peacetime times the number of peacetime safety level months established for each item. A "D-Day Program Change Factor" is applied to reflect the estimated increase or decrease in flying hours that will be occurring for certain aircraft in the months before D-Day. For the 6 items we reviewed, the number of peacetime safety level months ranged from a low of 1 month for some items to a high of 11.2 months for the adapter assembly.

As with the pipeline factor, we also found that the Aviation Command did not include a wartime safety level in its Northeast Asia [deleted] day requirement calculation. Thus, the concept of a wartime safety level is not consistently applied to both the NATO and Northeast Asia planning scenarios.

Due to the large number of requirement studies, it was impractical to determine the total dollar value impact for including a wartime safety level for all aviation items. The inclusion of this safety level, however, significantly increases the total number of items required to be procured and stocked for war reserves. For example, one consumable item we reviewed (see app. I) was an adapter assembly used on the AH-1S helicopter. The Army's computation showed that

596 parts will be consumed during the planning scenario (deleted days) and 1,335 parts will be required for a wartime or post D-Day safety level.

As shown in appendix I, eliminating the wartime safety level for the 6 items we reviewed reduces the war reserve materiel requirements by 2,286 items. Eliminating both the pipeline and wartime safety level for one item, the cap corner, can result in totally removing the item from war reserve stockage since peacetime assets and receipts from pre-D-Day contracts can satisfy the total deleted day need for the item.

The Aviation Command computes war reserve requirements for approximately 13,700 air items. Thus, eliminating the wartime safety level can significantly reduce the total item quantity and dollar value required for war reserve stockage. DOD currently believes that future conflicts will be short and intense in duration. The Secretary of Defense's decision to constrain the D- to P-concept to the deleted day planning scenario and limit war reserve procurement to deleted days exemplifies this belief.

POTENTIAL USE OF PRIVATE SECTOR PRODUCTION TO OFFSET REQUIREMENTS

Industrial preparedness planning is the ideal method for reducing the investment in prestocked war reserve assets. In other words, under the D- to P-concept which is still applicable to the deleted day planned scenario, if industry can deliver the requested items through accelerated production, lesser numbers of items will have to be prestocked in the war reserve inventory. For example, chart 1 illustrates total reliance on prestocked war reserves for the scenario assuming quantities from production will not be available for many months.

ILLUSTRATION OF D-P CONCEPT FOR COLDBASE FACILITY

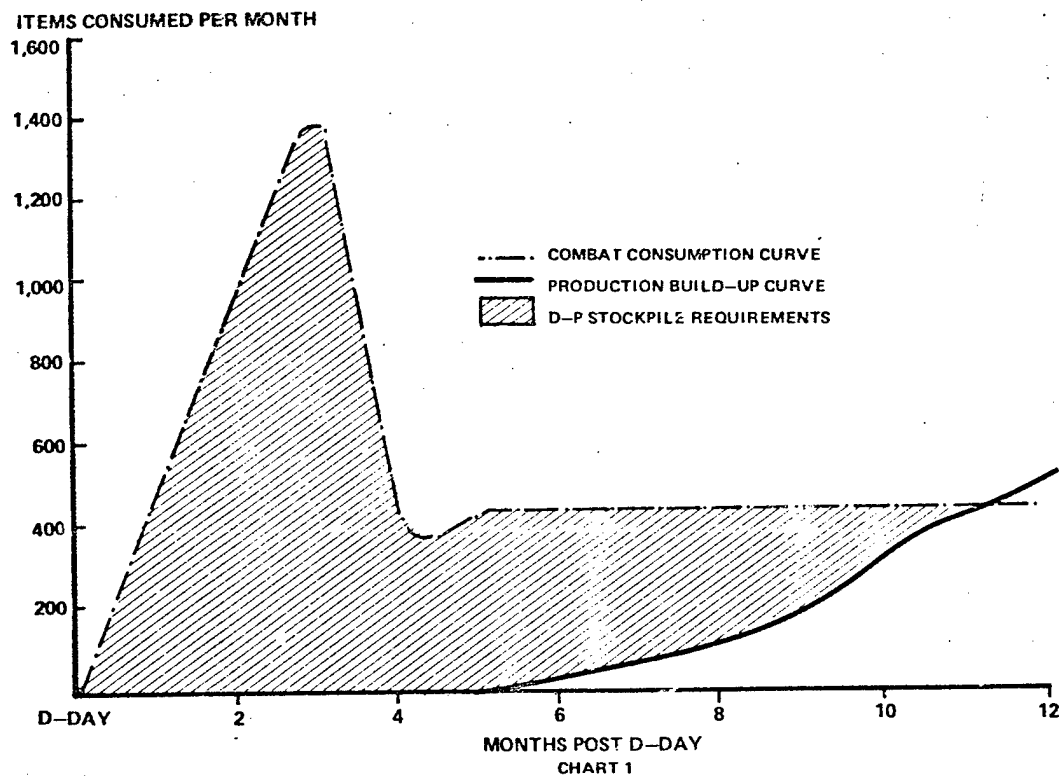
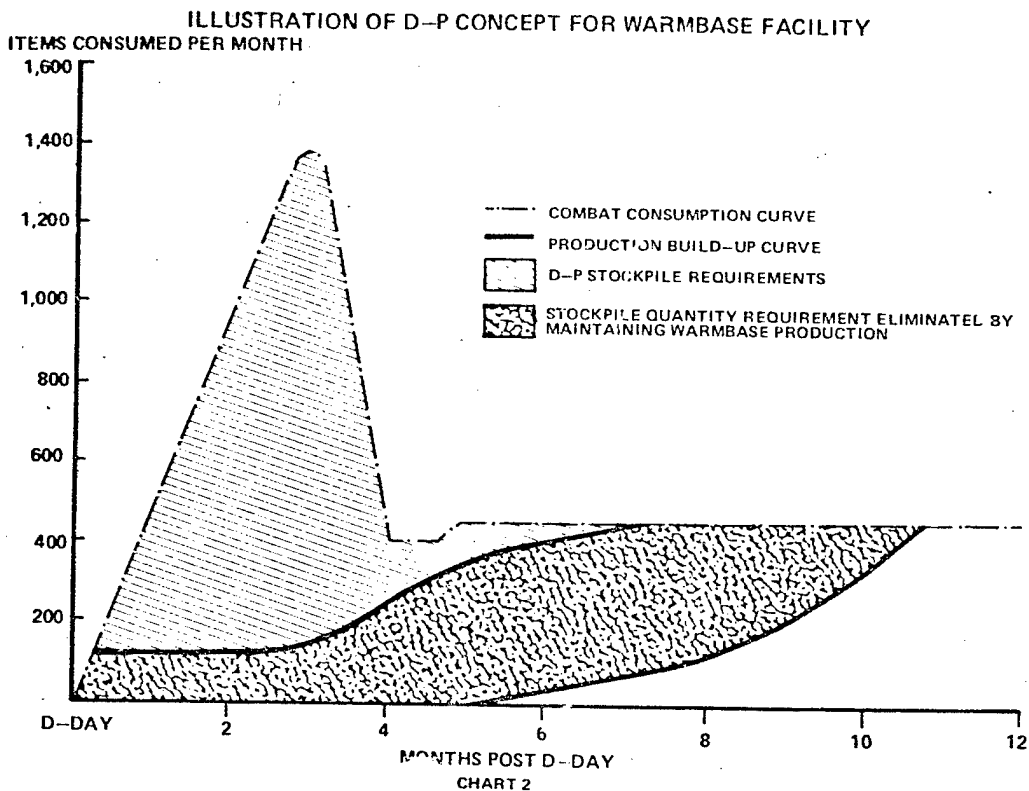


Chart 2 shows more reliance on accelerated production. If a production facility is currently producing the item, production will equal wartime consumption sooner and require less investment in war reserve items.



Cold base assumptions

Until the fiscal year 1978 computation, the Center had been using only the quantities the contractor had agreed to furnish to reduce clothing and textile OWRMR. On October 6, 1975, DLA directed the Center to use the estimated quantities contractors stated they could produce with existing facilities to offset requirements to a greater degree.

Center officials said that they are now using the contractors' estimated quantities, rather than what the contractors have agreed to furnish to reduce OWRMR. The contractors' figures, however, are an assumption that the contractors are operating at cold base at D-Day.

On the same form that the contractor shows his estimate, he also estimates the quantities he can produce at D-Day with existing facilities if he were operating at a certain level in peacetime. For example, one contractor's estimates showed that no materiel could be delivered until [redacted] deleted operating at cold base. If the contractor were operating at

a certain level in peacetime, however, 25,000 items could be delivered during the first month after D-Day.

Center officials said that they use the cold base assumption because suppliers may not be producing the items at D-Day. If suppliers cannot deliver any items during the initial months of war, war reserve materiel must be bought and prestocked in peacetime. The cold base assumption generally shows no deliveries from suppliers until deleted because operating at cold base requires time to set up the production line and to start producing (at least 90 days).

For items currently being manufactured to support peacetime operational needs, the Center should use a supplier's warm base estimate to substantially reduce the number of items required to be prestocked in peacetime for war reserves. To further reduce war reserve stockages, the Center should consider increased canvassing of the clothing and textile industry to determine current production capability and maximum wartime potential to support war reserve requirements.

The Army's requirements comprise the majority, approximately 85 percent, of the Center's clothing and textile OWRMRs. Before the Army sends its requirements for these items to the Center, it subtracts its prepositioned war reserve needs. The prepositioned portion of this requirement is sufficient to support all combat troops in the NATO scenario for deleted days and additional initial issue stocks for new personnel. Thus, the Army's system has already created a reserve of items to be used until suppliers can manufacture and deliver sufficient items to sustain the forces.

Furthermore, our review of clothing and textile items classified as requiring industrial preparedness planning showed that no agreements were in effect for many items. Center officials told us that they cannot plan every clothing and textile item under the Industrial Preparedness Planning program because of lack of personnel resources. We believe that the Center's war reserve requirements of clothing and textile items can be reduced by using warm base production estimates and by better industry planning.

Prior GAO suggestions to improve industrial planning

We have emphasized in prior reports ^{1/} the need for DOD to improve its industrial planning process, to assess industry potential to accelerate war reserve item deliveries, and to identify the long lead-time items that need to be stocked. A May 1977 report pointed out the inadequacies of DOD's planning with industrial suppliers for wartime mobilization needs. DOD officials generally concurred with our finding and promised increased management attention to improve the effectiveness of the Industrial Preparedness program. These improvements are essential if greater reliance is to be placed on the private sector to reduce the Government's investment in war reserve items.

For medical items, we recommended that DLA work with industry to obtain additional sources of supply for war reserve items that are readily available from commercial sources. In some cases, only one supplier had been contacted to supply specific items. For clothing and textiles, DLA can reduce the requirements for war reserves by relying on commercial substitutes for military specification items.

The cost for war reserve stocks of ammunition can be reduced substantially by stocking only long lead-time components rather than completely assembled and loaded rounds. The services' calculated the number of complete rounds of ammunition needed for war reserve stocks based on the production buildup rate of the limiting (slowest) components. For many items, the loading plants can initiate and expand production much faster than the plants producing the components. Therefore, the same degree of readiness can be achieved by stocking only those components which would otherwise delay the loading operations.

^{1/}The reports mentioned in the narrative are "Defense Supply Agency Could Reduce War Reserve Requirements for Medical Items" (LCD-76-405), dated March 5, 1976, "Military Clothing and Textiles for War Reserves Can Be Reduced" (LCD-77-411), dated January 24, 1977, "Mobilization Planning for Munitions" (B-172707), dated October 12, 1973, and "Restructuring Needed of Department of Defense Program for Planning With Private Industry for Mobilization Production Requirements" (PSAD-77-108), dated May 13, 1977.

An efficient Industrial Preparedness program should lead to increased reliance on industrial suppliers to accelerate production for mobilization needs. Ultimately, this should result in less investment and less prestocking of war reserves, as one of the more expensive alternatives of satisfying mobilization needs.

Aviation items

The Aviation Command uses the Industrial Preparedness Planning program to plan for the efficient use of existing commercial facilities to meet the Army's materiel production and maintenance requirements in the event of an emergency. Industrial Preparedness Planning is undertaken each fiscal year on only the most critical items which are primarily the expensive appropriation financed secondary items. The only stock fund items which have Industrial Preparedness Plans are main and tail rotor blades for helicopters.

Army regulations state that for expensive items not selected for Industrial Preparedness Planning, care should be taken to ensure that war reserve materiel requirement computations include receipts from production that could reasonably be expected after D-Day.

Aviation Command officials said that orders placed on or after D-Day from industry are not considered in the stock fund item requirement computations. They stated that most stock fund secondary items have production leadtimes that exceed the planning scenario. However, the current production leadtimes are based on normal peacetime operating procedures. Little effort has been expended to identify items that could be obtained in less than deleted days through accelerated procurement actions and production.

We believe that the Aviation Command's requirements for war reserves of aviation items should be reviewed with a view toward reducing production leadtimes in anticipation of shortened wartime procedures.

CONCLUSIONS

Because of the limited amount of funds DOD can expect to receive annually, and the large dollar value of critical war reserve shortages existing for various war reserve programs, the Secretary of Defense has instructed DOD components

to procure only [deleted] days of the total
[deleted] day planning scenario needs.

The Army's use of replacement rates higher than average monthly demands in peacetime and the assumption that inductees from civil life will be available at D-Day provides for more than enough war reserves. Some clothing and textile war reserve requirements are for items which could be produced by the Republic of Korea's textile industry. The Center's conservative practices of using peacetime production leadtime factors for nonplanned items, rather than adjusting the factors to simulate expedited procurement during an emergency, and assuming cold base production capability also contributes to higher requirements.

The Center applies a post D-Day safety level to the services' estimates and includes the total safety level amounts as assets to be available in the first month after D-Day. Since the total safety level amount is included in the first month's requirements, producers have little opportunity to supply the items through accelerated production. The Aviation Command also includes a safety level in its requirement calculations for spares and reparable items. In many cases, the safety level requirement for aviation items exceeds anticipated consumption in the [deleted] day scenario and should be eliminated.

The post D-Day safety level provides an additional stockage level similar to the pipeline factor and results in maximizing logistic support requirements to support combat forces during the first [deleted] days of the planning scenario. In view of the elimination of the post D-Day safety level for the chemical protective suit and the Secretary of Defense's [deleted] day procurement decision which limits DOD components from procuring the total [deleted] day scenario needs, we believe that the elimination of the safety level from stock fund requirement computations would provide management a more realistic estimate of needs.

We believe that the Army requirements for war reserves of clothing and textile and aviation items can be reduced through efforts to establish current planning agreements with industry.

RECOMMENDATIONS

We recommend that the Secretary of Defense

- direct the Secretary of the Army and Director, DLA, to eliminate wartime safety level factors from their war reserve requirement computations for stock fund items;
- study the feasibility of eliminating wartime safety levels from the war reserve requirement methodologies of the other military services;
- delete unnecessary clothing and textile items included in U.S. requirements for the Republic of Korea's requirements which it can meet with its production capability;
- direct the Aviation Command to compute war reserve requirements on the basis of accelerated wartime procurement action and production; and
- direct DOD components to use warm base contractor estimates instead of cold base plans if producers are currently manufacturing the item.

AGENCY COMMENTS AND OUR EVALUATION

DOD officials agreed that the methodology for computing wartime safety levels could be improved. They mentioned a DOD draft instruction is currently being processed which provides a standard methodology for calculation of war reserve requirements and which is expected to provide an improved safety level element of the computation.

We still feel strongly that DOD officials should eliminate safety levels. The Army clothing and textile estimates already exceed normal peacetime usage rates by compensating for previous combat replacement experiences, mobilization training surge rates, and initial issues for potential inductees from civil life. Additionally, the Center uses cold base assumptions when selected items are currently being manufactured for clothing and textile war reserve items. If warm base estimates were used for items currently in production, less items would have to be pre-stocked as war reserves. Regarding aviation items, Army regulations generally require that deleted of all classes of supply be prepositioned for use in NATO. Safety level quantities for these items are not necessary because the items are in place.

POD officials agreed to study the Republic of Korea's production capability to delete unnecessary clothing and textile items included in U.S. war reserve requirements.

DOD officials felt that Army elements should not compute war reserve requirements based on the accelerated wartime procurement action and production, nor should DOD components use warm base contractor estimates instead of cold base plans if producers are currently manufacturing the items.

DOD officials were under the impression that what meant that secondary stock fund items should be covered under the Industrial Preparedness Planning program. They mentioned many stock fund items do not warrant this type of planning because it is not economically feasible. Army officials indicated they do offset anticipated deliveries from producers during the scenario, but these offsets are based on peacetime production rather than wartime production capability.

We agree that Industrial Preparedness Planning should not be undertaken for many of the inexpensive stock fund items. However, action should be undertaken to reduce current production leadtimes because these times are based on normal peacetime operating procedures. The computational methodologies should include an offsetting factor recognizing DOD industrial planning guidance which states:

"Services and DLA should assume that in a NATO conflict the provisions of the Defense Production Act would be invoked and DOD would have top priority for all production output, both on orders placed after M-day and in accelerating deliveries of pre-M-day orders."

CHAPTER 5

OTHER MAJOR CONCEPTS

DRIVING WAR RESERVE

REQUIREMENTS NEED TO BE REVISED

The requirement computations for aircraft repair parts, components, and assemblies are automated (computer programed) calculations. The requirements are based on such factors as aircraft densities, projected flying hours, experienced demands from Army customers, engineering demands, and various program change factors--numbers used to anticipate expected user demands and returns over a forecasted period.

If the assumptions behind the factors are either incorrect or have not been coordinated and confirmed, the requirements will not be realistic. We believe several major assumptions and factors are questionable and are causing war reserve requirements for aviation items to be overstated. One such factor is the flying hour estimate.

The higher the number of flying hours estimated to be flown in wartime, the more war reserve items are required. Since flying hour rates will be significantly higher in the combat theater than stateside, the development of the wartime flying hour program will be directly affected by the capability to deliver major weapon systems to the combat zone within the planning scenario. We believe that the total flying hours forecasted by the Army's Aviation Command are overstated because (1) the quantities of aircraft estimated to be deployed to a NATO scenario after D-Day may be unrealistic since the Command did not coordinate its estimates with the Air Force's Military Airlift Command and (2) attrited and combat damaged aircraft were not properly accounted for in the computations.

The Aviation Command uses a "D-Day Program Change Factor" to estimate the increase in peacetime flying hours that will be occurring in future months before D-Day as a unit becomes more active with new equipment. In computing war reserve requirements, however, the Command is not considering all peacetime assets assumed to be on hand at D-Day.

The Aviation Command includes in its requirement calculations for reparable type items, a factor known as rebuild safety level turnaround requirement. We believe that the assumptions used to compute this requirement result in inflating the number of items required to fill the repair cycle. The Command uses [deleted] days as the time required to send repair items from stateside to Europe and [deleted] days to return a failed item from Europe to stateside. Additional days are calculated for repair time and safety levels with the total time in many cases, exceeding the [deleted] day planning scenario. Assuming that 1 reparable item is needed for every combat day, then as currently computed, additional items are needed for each day the repair cycle exceeds [deleted] days.

We also believe that the shipping times used for aviation items are not realistic in view of the Army's new shipping policy via air transportation. The objective of this concept, called the Air Lines of Communications (ALOC), is to transport aviation items to Europe in as little as 20 days. Faster shipment would reduce the number of items required to fill the repair cycle. Furthermore, the Army's requirement for a wartime safety level element of the repair cycle increases the number of items to be stocked for war reserves. We believe that the Army's assumption that the wartime repair times will be the same as peacetime repair times is sufficiently conservative without including an additional stockage level for wartime safety levels.

INTEGRATED WAR RESERVE PLANNING NEEDED TO
REALISTICALLY DETERMINE WAR MATERIEL REQUIREMENTS

To compute the flying hours for Army aircraft during the mobilization period ([deleted] days), the Command estimated that hundreds of aircraft would be airlifted from stateside to Europe in U.S. Air Force C5As during each 30-day increment of the mobilization period.

The maximum quantity of aircraft estimated to be deployed was computed by the Command's Directorate for Systems Management based on the assumption of one C5A dedicated to each type of aircraft. The Command official who estimated the maximum deployment quantities said that the Air Force's Military Airlift Command was not contacted to determine whether the quantities he estimated were compatible with the Airlift Command's war plans.

Based on the above concept of post D-Day deployment and actual helicopters available in stateside for deployment, the Command computed that [deleted] helicopters could be deployed. As a result, the flying hours associated with the following quantities of helicopters are included in the war reserve requirements computations of all applicable, consumable, and reparable components for each system.

Aircraft
models

UH-1H
OH-58A/C
CH-54A
CH-47A
CH-47C
AH-1G
AH-1S

[deleted]

Total

A Joint Chiefs of Staff strategic mobility study, dated February 8, 1977, indicated that a serious lift delivery shortfall exists (both sea and air) for two NATO reinforcing scenarios. Using the [deleted] day warning scenario, at [deleted] there is a delivery shortfall of [deleted] Army divisions, 495,000 short tons of unit equipment and [deleted] short tons of resupply and ammunition. Moreover, the study indicated that premium airlift in the first [deleted]

[deleted]

No doubt, some helicopters will be deployed with high priority reinforcing units, but with such a lift shortfall, it does not seem reasonable for the Aviation Command to assume that [deleted] helicopters will be delivered to the combat theater during the first [deleted] days without coordinating this requirement with the Military Airlift Command. Therefore, the flying hours used to determine war reserve requirements for helicopter consumable and repair parts may be significantly overstated.

We recomputed the flying hours for three of the above aircraft assuming no deployment to a NATO scenario after D-Day. While this type of situation is not likely to occur for a specific type of aircraft, the comparison does demonstrate the potential impact of this overstatement on a few items.

<u>Aircraft</u>	<u>Flying Hours</u>		<u>Difference</u>
	<u>With deployment</u>	<u>Without deployment</u>	
UH-1H	546,445	426,592	119,853
AH-1G	86,634	31,940	54,694
AH-1S	114,220	75,603	38,617

Note: Flying hours for aircraft located in a NATO scenario are higher than for aircraft located stateside. For example, UH-1H flying hours per aircraft each 30 days for the NATO scenario are deleted for the intense and sustained periods, whereas the stateside flying hours are deleted per aircraft each 30 days.

As shown above, there would be significant differences in the flying hours used in war reserve computations for consumable and repair parts if the deployment after D-Day is not feasible.

On the next page are examples of the effect on the war reserve requirements for selected aircraft consumable and repair items assuming no deployment after D-Day.

	War Reserve Materiel Requirement			
	With deployment		Without deployment	
	Quantity	Total value	Quantity	Total value
Skid, tube				
assembly	577	\$ 351,393	563	\$ 342,867
Fitting	302	289,316	251	240,458
Adapter				
assembly	2,381	140,146	2,179	128,256
Blade				
assembly	771	5,953,662	602	4,648,644
Total	<u>4,031</u>	<u>\$6,734,517</u>	<u>3,595</u>	<u>\$5,360,225</u>
Difference				
without				
deployment			<u>436</u>	<u>\$1,374,292</u>

AIRCRAFT ATTRITION NOT ADEQUATELY
ACCOUNTED FOR IN SUPPLY CALCULATIONS

For each aircraft model, the Army assigns a flying hour rate for both the intense and sustained periods of combat. To compute the total number of flying hours expected to be flown for any given month of the planning scenario, the Army multiplies this flying hour rate by the number of aircraft that will be in the combat area at D-Day. Aircraft will also be deployed to the combat area during each 30-day increment. Since all replacement aircraft will not arrive in the combat area on D-Day, the Army assigns each deployed aircraft flying hours equal to one-half the programmed intense or sustained flying hour rate for the month in which it will arrive in the theater. Since a number of aircraft will be lost to attrition and combat damage each month, the Army assigns these aircraft flying hours equal to one-half the programmed flying hour rate for that month.

The Aviation Command's computed flying hours are overstated because aircraft estimated to be lost through attrition and combat damage were not subtracted from the number of aircraft that will be in the combat theater at the beginning of each month of the planning scenario or aircraft which will be deployed to the combat zone during each 30-day increment.

For example, the Aviation Command shows that [deleted] UH-1H helicopters will be in the combat theater at D-Day. These helicopters are programed to fly [deleted] hours each during the first month. During the first 30-day increment, the Aviation Command estimates that an additional [deleted] UH-1H helicopters will be deployed to the combat theater and [deleted] will be lost through attrition and combat damage during the first month. Using this information, it computed a total flying hour program of [deleted] hours for the first month of the planning scenario as shown below.

UH-1H
Army's Flying Hour Calculation

	<u>Aircraft</u>	<u>Flying hour rate</u>	<u>Total flying hours</u>	<u>GAO correc- tion</u>
Beginning aircraft in combat zone				
Plus aircraft deployed to theater				
Gross assets and maximum flying hours				
Plus attrited and combat damaged				
Net assets and total flying hours				
GAO correction Delete attrited and combat damaged				
Total flying hours				

We found the attrited and combat damaged aircraft should have been subtracted from the computation reducing the above total by 3,444 hours to [deleted] flying hours. Army officials explained that the mistake occurred only for the first month's calculation for one helicopter and the problem had been corrected.

The Department of the Army should also reassess the intense and sustained flying hour estimates per aircraft per month, that Headquarters, Army, provides to the Aviation Command for the mobilization flying hour program computations. The Department of the Army initially provided higher flying hour rates for the OH-6 aircraft than for the OH-58 aircraft. A Command official questioned the rates because the OH-58, which had lower flying hour rates, was considered the first line observation helicopter. The Department of the Army later informed the Aviation Command to use the higher OH-6 rates for the OH-58 since both helicopters have the same mission.

In our opinion, the flying hour program computed by the Aviation Command for use in its war reserve materiel requirement computations is not realistic regarding post D-Day deployment and because attrition and combat damage are not accurately accounted for. As shown by the few examples, if the Army is unable to obtain premium airlift after D-Day to move the aircraft, war reserve requirements for many of the approximately 13,700 consumable and repair parts may be significantly overstated.

BETTER USE OF THE PROGRAM CHANGE FACTOR TO ESTIMATE ON-HAND ASSETS

In chapter 3, we discussed the D-Day Program Change Factor the Aviation Command used to compute requirements to support the residual force [deleted] day pipeline factor). We recommended that the Command eliminate the additional [deleted] days from its requirement calculations. We believe, however, that the D-Day Program Change Factor should be used to estimate the quantity of peacetime repair parts anticipated to be on hand at D-Day. Since this factor was not considered by the Aviation Command, and since peacetime flying hours and, thus, repair parts stockages are likely to increase just before D-Day, we believe that the majority of all war reserve

materiel requirements for both consumable and reparable items are overstated.

The D-Day Program Change Factor is a ratio of average monthly peacetime flying hours (based on the past 12 months) compared to the projected monthly peacetime flying hours at D-Day. This D-Day Program Change Factor varies for each air item, depending on which aircraft or mix of aircraft will use the item. The D-Day Program Change Factor may be more or less than 1.0, depending on whether equipment in the months before a potential D-Day will be operating at higher monthly peacetime hours or lower monthly peacetime hours compared to the monthly peacetime hours experienced when the war reserve calculation is made.

When the Aviation Command computed offsetting peacetime assets assumed to be on hand on D-Day, the D-Day Program Change Factor was not considered. Any aircraft system that is projected to have higher peacetime flying hours just before D-Day will (based on materiel management procedures) have larger quantities of repair parts on hand because of normal demand-based supply actions.

We recomputed, using the D-Day Program Change Factor when computing D-Day assumed peacetime assets, the war reserve materiel requirements on a few items. As shown in appendix I, 5 of 6 items reviewed had a program change factor of more than 1.0 and the number of assets anticipated to be on hand at D-Day were understated by 804 items. Items with higher factors generally are applicable to newer Army aircraft, such as the AH-1S, that will have increased flying hours as systems are fielded. By excluding the D-Day Program Change Factor from the formula when computing assets assumed to be on hand at D-Day, the Command has overstated or understated its war reserve materiel requirement for the 13,700 air items it manages.

Our analysis of the war materiel requirement indicates the majority of the requirement is related to series of aircraft with a D-Day Program Change Factor in excess of 1.0. Thus, it appears that the total war reserve materiel requirement would decrease if the D-Day Program Change Factor was considered when computing assets assumed to be on hand at D-Day.

THE REPAIR CYCLE TECHNIQUE
OVERSTATES WAR RESERVE REQUIREMENTS

War reserve requirement computations for aviation repair items must consider not only the percentage of items that are disposed of or consumed during the wartime planning scenario, but also the number of items that will be returned stateside for repair and shipped back to the combat theater for reuse.

The rebuild safety level turnaround requirement combines the rebuild turnaround requirement and the safety level requirement. Although computed separately, these requirements are added together to reflect the total wartime need in the repair cycle. The quantity of items estimated to be in the repair cycle at D-Day is subtracted from this total to determine the number of items necessary for war reserve stockage.

The following four assumptions are used to compute the rebuild safety level turnaround requirement for a reparable item.

- The time required to return an item from Europe to stateside is deleted days for all reparable items.
- The time required to return all items from stateside to Europe is deleted days.
- The wartime repair time is the same as the peacetime repair time.
- The number of months used to calculate a wartime safety level quantity for items not condemned or otherwise lost to the supply system is the same as the number of peacetime safety level months.

Repair cycle should not
exceed the planning scenario

The rebuild turnaround requirement is computed based on shipping times from stateside to Europe and from Europe to stateside, plus the time it takes to repair the item. Currently, the shipping times amount to deleted months-- deleted months from stateside to Europe and deleted months from Europe to stateside. The

time required to repair an item varies from item to item, depending upon the item's peacetime repair time.

We believe that the current quantities of repair parts that the Aviation Command currently computes to fill the repair cycle are overstated for all reparable items having a repair time of 1 month or more. The total number of items to fill the entire repair cycle, which includes the shipping times from stateside to Europe and from Europe to stateside, and the repair time, should not exceed deleted months or the length of the wartime planning scenario.

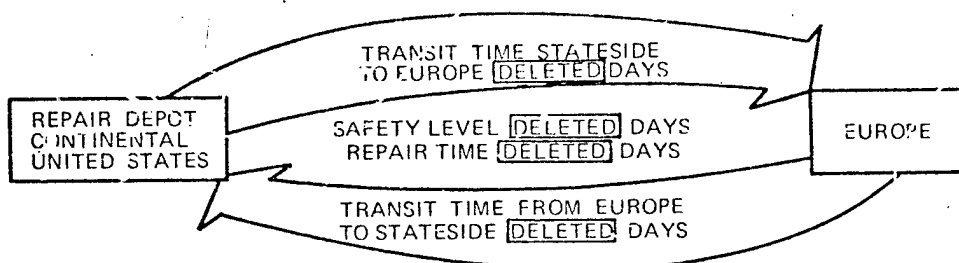
Using the above stated Army assumptions related to shipping times repair time and safety level months, a typical reparable item might require a rebuild safety level turnaround time of deleted days.

[]	days--shipping time from state-
	side to Europe
	days--shipping time from Europe to stateside
	days--normal safety level
	days--estimated repair time
<u>deleted</u> days--total rebuild safety level turnaround time	

The current length of the planning scenario is deleted days. Shipping or transit time accounts for deleted days of the planned scenario. Not even considering the safety level investment required, any item requiring repair exceeding deleted days results in increased investment and overstated requirements for war reserves, since these items would be returned to the theater after the war is over. If repair time and safety level are added to the shipping times, deleted

The repair cycle concept is displayed below.

EXAMPLE OF REPAIR CYCLE
TURNAROUND TIME [DELETED] DAYS



Note: Blockings in the above table are [deleted]

Assuming that one repair part were necessary each day to keep the repair cycle full, then 160 items alone would be required to meet the shipping times. Normal safety level items would amount to 45 items. The combined item requirements of shipping time and safety level would exceed the planning scenario by 25 items without considering the amount of items required to fill the cycle while items were being repaired.

The repair cycle turnaround time is similar to DLA's original D- to P-concept. The requirement is calculated to obtain assets from the cycle to match failures that will occur each day no matter how long the war continues. As indicated previously, OSD limited DLA to [deleted] days. The Aviation Command is complying with the OSD policy limitation in the case of consumable type items.

The distinction in the treatment of a reparable item is illustrated on the following page. We have assumed a repair cycle of [deleted] day safety level.

<u>Days elapsed</u>	<u>Assets</u>	<u>Number of items inducted into repair cycle (note a)</u>	<u>Number of items returned from repair cycle</u>
deleted	235	-	-
	225	10	-
	215	10	-
	205	10	-
	195	10	-
	185	10	-
	175	10	-
	165	10	-
	155	10	-
	145	10	-
	135	10	-
	125	10	-
	115	10	-
	105	10	-
	95	10	-
	85	10	-
	75	10	-
	65	10	-
	<u>b/55</u>	<u>10</u>	<u>-</u>
	45	10	-
	45	10	10
	45	10	10

a/The repair cycle is comprised of deleted days to return an item from Europe to stateside, 30 days to repair the item, and deleted days to send it back to Europe. As can be seen from the above, items put into the repair cycle from deleted will complete the cycle between deleted

b/Number of items in excess of deleted day needs.

Shipping times overstate
requirements for aviation reparable items

Another problem we identified involves the shipping times used to send reparable items from stateside to Europe and from Europe back to stateside. When computing the rebuild turnaround requirement, the Aviation Command uses shipping times from stateside to Europe of [deleted] days and from Europe back to stateside of [deleted] days. We believe that these transit times are not realistic in view of the Army's ALOC concept and result in overstatements in war reserve reparable aviation items.

We discussed with Aviation Command officials the rationale for having a [deleted] day shipping time from stateside to Europe. They stated that [deleted] days is consistent with the time used to compute the pipeline factor. As you will recall from chapter 3, we were initially told that this factor was required to "swell" the peacetime pipeline to a wartime level during the initial months of war. Later, Army officials agreed that prepositioned stocks are computed based on the length of time to resupply Europe and there was no need to compute this factor. Thus, the logic given to support the [deleted] day shipping time from stateside to Europe is still unclear.

The ALOC concept was implemented in January 1977, to improve readiness of Army units in Europe. Under ALOC criteria, all repair parts will be shipped via air transportation in as little as 20 days. Faster shipment should allow stockage levels to be reduced since less time should be incurred in sending materiel from stateside depots to customers in Europe. Our review showed that shipping time parameters for aviation items were not adjusted when the Army shipping policy was changed. A schedule showing the shipping time parameters currently used to supply U.S. forces in Europe follows:

<u>Type of</u> <u>transportation</u>	<u>Aviation items</u> <u>number of days</u>
Air	40
Surface	70

ALOC status reports as of June 30, 1977, showed that the average actual air transportation order shipping time was 31 days. Based on the actual time currently being incurred, stockage requirements for aviation items will be overstated unless the requirements are adjusted. We believe that the Aviation Command should be instructed to adjust the shipping time parameters to reflect the ALOC concept.

It should also be noted that in chapter 3, Army officials stated that the mid-range of the resupply times to Europe is 55 days. These same officials also said that the mid-range is based on expected surface shipment in wartime. Thus, even if to be conservative, surface shipping times should be used to determine reparable item war reserve stockage, the deleted day factor is excessive.

Army delivery times for major items
and spare part support are inconsistent

As we indicated previously, the Army's flying hour program is based on expected combat rates. Helicopters already in theater are assigned intense or sustained rates. Helicopters to be delivered to the theater during the scenario are assigned flying hours at half the combat rate. This practice assumes that helicopter delivery will take deleted

Since requirements for war reserve spares and repair parts are projected based on the anticipated surge in combat flying hours, the quicker aircraft are scheduled for delivery to the war zone, the higher the projected flying hours, and thus, the greater the need for spares and repair parts. If, on the other hand, the shipping times used in the computation for spares and repair parts are longer than they are for major weapon systems being supported, the requirement for these items increases even more. Thus, the combination of short delivery times for major items increasing flying hours and the lengthy shipping times referred to in the previous section for computing spare parts requirements results in the maximum requirement for war reserves.

The Army's approach of using short delivery times for major equipment and longer delivery times for support items is inconsistent. If major items are to be assigned a specific

number of flying hours based on expedited delivery times, spare parts both reparable and consumable, should be computed on the same flying hour program delivery times. If it is reasonable to assume that helicopters can be shipped to the theater in [deleted] it is not reasonable to assume that it will take [deleted] to ship spares, and another [deleted] for returning reparable. More aircraft are available to transport support items than out sized cargo. For expensive reparable, the repair cycle can be shortened because of the retrograde cargo space and quick turnaround time of the delivery aircraft. Using reasonable resupply times to compute requirements for reparable should substantially reduce the investment in war reserves.

CONCLUSIONS

Flying hours used to determine war reserve requirements for consumable and repair parts may be significantly overstated because airlift requirements were not coordinated with the Military Airlift Command. The flying hour program should have also been reduced to account for attrition and combat damage of aircraft, thereby reducing requirements for aviation items.

Repair cycle shipping times and repair times are currently exceeding the length of the planning scenario. Any reduction in the number of days required to ship items back and forth to Europe would result in a corresponding decrease in the number of items necessary for war reserves. The new concept (ALOC) of forwarding repair parts to Europe via air would significantly reduce reparable item requirements.

RECOMMENDATIONS

We recommend that the Secretary of Defense:

- Require the Army to coordinate its airlift requirement with the Military Airlift Command and adjust flying hours and the resulting spare part requirements.
- Direct the Aviation Command to properly consider attrition and combat damage to reduce flying hours, maintenance personnel, spare parts, and equipment requirements.

--Direct the Aviation Command to limit the total repair cycle time to a [deleted] day planning scenario, and to use more realistic shipping times and distributing methods, giving consideration to probable ALOC availability.

AGENCY COMMENTS AND OUR EVALUATION

Army officials agreed with our recommendations to, (1) properly consider attrition and combat damage to reduce flying hours and spare part requirements, (2) use more realistic shipping times, giving consideration to probable ALOC availability, and (3) limit the total repair cycle to a [deleted] planning scenario. We intend to follow up on the action taken at a later date.

Army officials did not agree with our recommendation to coordinate its airlift requirement with the Air Force Military Airlift Command. They stated combat delivery resupply of helicopters to the theater must be assumed and shortfalls in resupply will not change projected war time losses of aircraft. The Army officials also commented that if replacement aircraft cannot be resupplied on time, the remaining aircraft will be used at a greater rate and this would increase requirements for repair parts and flying hours rather than reduce them.

We agree that if replacement aircraft cannot be transported on time, the remaining aircraft will have to be flown longer hours. However, flying aircraft at a greater rate will increase the attrition rate also. Ultimately, this would result in the need for less spare parts to support those aircraft.

We do not agree that combat deliveries of aircraft must be assumed. At a minimum, the aircraft requirement should be coordinated with the Military Airlift Command. In our past reports, we have recommended integrated war-time planning to achieve the most efficient use of critical lift resources. Without this integrated war planning, we do not believe a realistic flying hour program and the resulting war reserve requirements for consumable and repair parts can be determined.

CHAPTER 6
ORGANIZATION AND FUNDING
PROBLEMS IN THE MANAGEMENT OF
CLOTHING AND TEXTILE WAR RESERVES

Our review of clothing and textile war reserve items indicates the existing system for managing clothing and textiles obstructs the effective management of war reserves.

DLA, the Army, and Army overseas commanders all manage various aspects of clothing and textile war reserves and they are responsible for funding portions of their war reserve stockage objectives. Current organizational arrangements and funding procedures between these activities impede transfer of stocks to higher priority need categories. Prepositioned items and quantities are being questioned by overseas commanders and separation of war reserve responsibilities provides little incentive to identify only the most essential requirements.

ORGANIZATIONS SHARING MANAGEMENT OF
CLOTHING AND TEXTILES

Army Support Activity

DARCOM is responsible for managing the Army's war reserve program. The Army Support Activity, Philadelphia, Pennsylvania, a subordinate service item control center for DARCOM is primarily responsible for clothing and textiles to the extent of

--item selection;

--requirement calculations for prepositioned, general, and overseas war reserve categories; and

--control over prepositioned stocks stored in Army stateside warehouses.

The Support Activity calculates requirements based on a sized force structure expected to be introduced to an overseas theater. The computation includes initial issues to activating units, anticipated wartime consumption quantities, and allied requirements. The Support Activity, however, does not have many of the responsibilities normally assigned to

a national inventory control point, such as procurement and management of peacetime clothing and textile stock and general war reserves. These functions are performed by the Center, a major subordinate command of DLA.

DLA/Center role in war reserves

Subsistence and clothing and textiles are under the integrated materiel management of DLA; specifically, its Center in Philadelphia, Pennsylvania. For both clothing and subsistence, the Center procures both prepositioned and general mobilization stocks. The Center also owns, manages, and controls the Army's clothing and textile OWRMR portion of war reserves.

However, in January 1978 DLA took over management responsibility for Army subsistence prepositioned war reserves in the United States. DLA had previously assumed management responsibility for subsistence items in Europe and the Pacific. The Army Support Activity will continue to compute requirements, but the Center will manage subsistence items entirely. Since clothing and textile items are also procured and managed at the same Center, it would be advantageous for that logistics element to be the single-item manager for clothing and textile war reserves. We believe this would streamline existing complex organizational arrangements.

Annually, the military services submit their general or other clothing and textile war reserve materiel requirements to the Center. For each item of materiel, each service indicates what is needed for the first [deleted] months stated in two [deleted] month increments and for the allied forces for the first [deleted] months after D-Day. The services' prepositioned war reserve requirements have been deducted.

As indicated in chapter 4, the Center consolidates the services' first [deleted] month requirement and phases it into equal increments for [deleted]. The Center also consolidates the services' other requirement and phases it into equal increments for [deleted]. The Center adjusts the military services' requirements by deducting total peacetime assets and routine anticipated deliveries after D-Day. It then adds a post D-Day safety level to the total service requirement. For planned items that are covered by the industrial planning

program, an additional adjustment is made for anticipated deliveries by producers after D-Day. The adjusted requirement represents those quantities of clothing and textile items that should be stocked in advance to insure logistics support of the military services in the event of war.

After an item's net requirement is developed, the Center allocates the quantity of war reserve assets it has in stock to each military service based on the ratio of each service's requirement.

Army overseas theater commanders

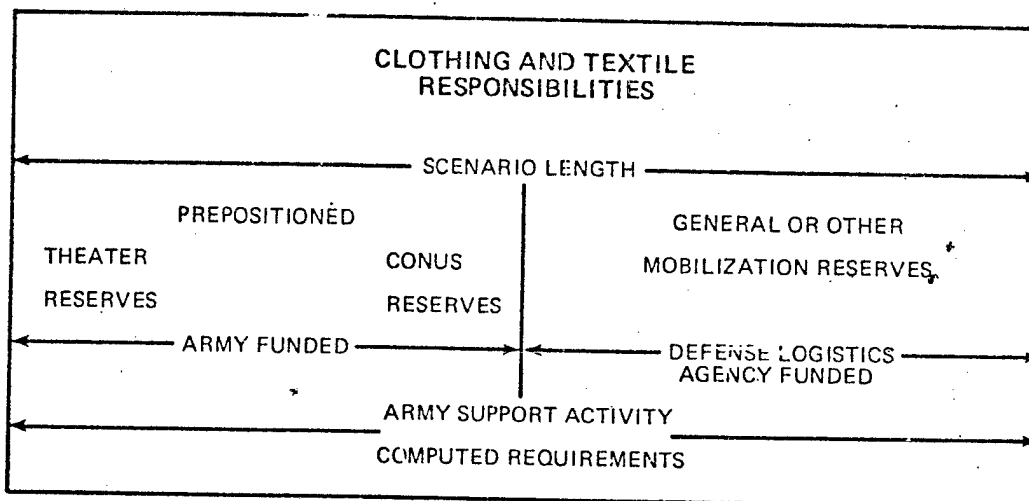
Overseas theater commanders also share responsibilities for war reserves because they

- fund and purchase the assets through the Center and
- control and issue stocks.

The Army Support Activity computed prepositioned requirement is sent to theater commanders. Theater commanders review and recommend changes to Army headquarters as to specific items and quantities needed.

Funds for theater war reserve requirements are provided directly to overseas commanders. These commanders store and maintain the overseas prepositioned war reserves. The prepositioned requirements are dispersed in various theater locations.

In summary, the Army separates war reserves into (1) prepositioned levels and (2) other war reserves or general mobilization stocks. Generally, the prepositioned category is owned and managed by the Army, and the other war reserve or general mobilization stocks are owned and managed by DLA. Prepositioned reserves can be either stored in overseas commands or at Army depots in the United States. Other war reserves are stored in DLA depots. The Department of the Army funds the prepositioned portion and DLA funds OWRMR. The following is a chart showing management, funding, and requirement determination responsibility for clothing and textile items.



SYSTEM PROBLEMS CAUSE SIZABLE
SHORTAGES IN PREPOSITIONED STOCKS

A war reserve summary for all supply classes furnished by the Army, depicts the current status of the program.

Army War Reserve Status
Stock Fund Items-end FY 78

<u>Category</u>	<u>Requirement</u>	<u>Assets</u>	<u>Deficiency</u>
	(millions)		
Army managed items:			
Prepositioned	\$ 487.2	\$ 332.7	\$ 154.5
Other war reserves	<u>959.4</u>	<u>298.1</u>	<u>661.3</u>
Subtotal	<u>1,446.6</u>	<u>630.8</u>	<u>815.8</u>
Defense managed items:			
Army prepositioned	999.1	583.9	415.2
DLA other war reserves	<u>1,133.4</u>	<u>654.2</u>	<u>479.2</u>
Subtotal	<u>2,132.5</u>	<u>1,238.1</u>	<u>894.4</u>
Total	<u>\$3,579.1</u>	<u>\$1,868.9</u>	<u>\$1,710.2</u>

As the previous table illustrates, significant shortages of Army war reserve items exist in the prepositioned level, while assets are available in the other war reserve category. As we indicated previously, the Army Support Activity, after determining its prepositioned item requirements, forwards the balance to the Center. The balance becomes OWRMR managed by the Center with guidance from DLA.

The Congress appropriates moneys to both Army and DLA stock fund accounts for funding their respective war reserves. Because they are separate entities with differing responsibilities, an obstacle exists to impede transfer of assets to the higher priority category, i.e., overseas. To fill the priority prepositioned category, the Army would have to purchase the assets from DLA to reimburse the stock fund. The Army plans to purchase all its prepositioned shortages in future years. Yet, DLA has assets of the same items that are short in the Army prepositioned category. According to Army data, DLA has \$654.2 million other war reserve category assets earmarked for the Army, while the Army category has a \$415.2 million deficit for these same items. However, in fiscal year 1977, DLA provided the Army \$49.1 million to purchase war reserve shortages. DLA obtained these funds by selling excess assets.

As also can be seen from the war reserve summary, the Army has shortages in its overseas prepositioned category of \$154.5 million and assets in its stateside prepositioned category of \$298.1 million. An Army logistics official said that at the present time an Army Controller's ruling prohibits asset transfers to war reserve stocks from a low priority claimant (stateside) to a higher priority claimant (overseas) without transferring funds. The same Army official told us that a procedural change to facilitate transfer of assets within the Army was going through the approval process.

U.S. Army Europe questions need for
prepositioning certain items

As discussed above, theater commanders use funds furnished by the Department of the Army to purchase and store war reserves. They also comment on the essentiality of items and validity of the numbers computed by stateside inventory centers. During a recent visit to the Department of the Army, a senior logistics official from U.S. Army, Europe, wanted to place numerous (1,300) war reserve items in stateside prepositioned stocks because of a lack of overseas storage facilities and skepticism as to the essentiality of certain items and quantities.

Army logistic inventory centers compute requirements and forward them to overseas commanders for review and comment. The listing is then returned to headquarters. An Army logistics official stated that the overseas commanders add items to the listing, in effect, determining their own essential items. The same official added that the overseas commands and stateside inventory centers have never agreed on essential requirements. One reason theater commanders question the need for certain clothing and textile items is because probability studies to determine wear-out rates for many of these items have never been done.

The senior logistics official's request to place overseas war reserves in the stateside prepositioned category will mean accepting the risk of not having these items available until resupply is established in wartime. In effect, Army officials in Europe are questioning the essentiality of these items and the need to store them overseas.

NO INCENTIVE TO IDENTIFY AND FUND ONLY
ESSENTIAL REQUIREMENTS

For items common to all services, DLA is responsible for managing the general or other war reserve stocks. For example, the Army computes gross war reserve requirements for these items. After the Army subtracts the necessary amounts to agree with its prepositioned needs, the remaining requirement is sent to DLA. The other services also submit requirements for the same items to DLA.

The present Secretary of Defense guidance states "the services will program funds for DLA-managed war reserves based on DLA's allocation of the total DLA war reserve deficiency among the services." An August 11, 1977, Assistant Secretary of Defense memorandum mentioned the Army has not funded these requirements in the past nor does it plan to fund them in the future.

The same OSD memorandum also mentioned the new programming system requiring the services to fund DLA shortages presented opportunities for abuse. As shown in the asset allocation on the following page, it is to the Army's advantage not to fund the Center-managed other war reserve shortages. Also, the other services would not have eliminated their deficits although they may have programed funds expressly for that purpose. OSD officials were working with the services to assure realistic requirements and funding of other war reserves. The memorandum recommended the Army reconsider

its current practice of not funding Army requirements for Center-managed other war reserves.

To illustrate the potential for system abuse, an allocation of the Center's OWRMR might be as follows.

War Reserve Needs
FY 78

<u>Service</u>	<u>Required amount</u>	<u>Assets</u>	<u>Deficit</u>	<u>Asset allocation percentage</u>
Army	100	50	50	20
Navy	200	100	100	40
Air Force	200	100	100	40
Total	<u>500</u>	<u>250</u>	<u>250</u>	<u>100</u>

Should the Army, for example, increase its fiscal year 1979 requirements sent to the Center and not provide any funding, then the following asset stratification by the Center could result.

War Reserve Needs
FY 79

<u>Service</u>	<u>Required amount</u>	<u>Assets</u>	<u>Deficit</u>	<u>Asset allocation percentage</u>
Army	600	270	330	60
Navy	200	90	110	20
Air Force	200	90	110	20
Total	<u>1,000</u>	<u>450</u>	<u>550</u>	<u>100</u>

By forwarding additional requirements to the Center, the Army's allocation of existing assets could change from a low percentage to one considerably higher. Similarly, if the other services had requirements for the same clothing and textile items and they decided to fund their existing deficits, and these items were purchased by the Center, then the Army's allocation of assets could rise and the other services' asset position would be eroded because of the way the asset stratification is made. The Center does not segregate stocks even if a service has paid for them.

Evidently, logistic entities are not encouraged to identify only essential requirements or fund general mobilization requirements. If the services do not fund these requirements, then DLA must request congressional funding to satisfy these requirements. In fiscal year 1978, the Congress provided DLA \$4.3 million; however, DLA has not requested stock funds for fiscal year 1979 because any war reserve funds received from the Congress are to be used for prepositioned shortages.

CLOTHING AND TEXTILES FISCAL YEARS 1978 AND 1979
BUDGET SUBMISSIONS OVERSTATED AND DUPLICATED

The Army's budget submission to the Congress for fiscal year 1978 included clothing and textile war reserve requirements of \$1,783.7 million. The prepositioned requirement amounted to \$635.2 million and the remainder or OWRMR was \$1,148.5 million. DLA clothing and textile requirement data for fiscal year 1978 indicates the total Army OWRMR was \$1,015.3 million, or \$133.2 million less than the total submitted by the Army to the Congress.

We discussed this discrepancy with an Army logistics official. He indicated the discrepancy was because DLA's offsets, such as the production and commercial available item programs, had not been subtracted from the total requirement which resulted in a \$133 million overstatement in requirements.

Similarly, the same overstatement of requirements affected the fiscal year 1979 budget submission to the Congress. The Army logistics official indicated the problem is due to a time lag in when the documentation is prepared. The requirement data presented to the Congress is prepared in December for submission to the Congress in January. Information related to DLA's production offsets is not available until March.

To overcome the error due to the time lag in data outlined above, a procedure to project production offsets should be included in the budget submission to the Congress to more realistically reflect total war reserve requirements.

Moreover, the requirement data submitted to the Congress by the Army and DLA for stock fund items in fiscal year 1978 was duplicated. The Army's presentation included DLA's other war reserve needs and as mentioned above, the deficiency was inflated because the requirements were not reduced by estimated production offsets. DLA's presentation showed all

services OWRMR which were already a part of the Army's presentation. Furthermore, DLA's own budget requirements were overstated because it was using the D- to P-concept as discussed in chapter 3.

CHEMICAL PROTECTIVE CLOTHING DRIVES CLOTHING AND TEXTILE REQUIREMENTS

The Army's fiscal year 1979 budget request to the Congress showed a U.S. Army, Europe, stock fund item deficit of \$181.4 million. The majority of this deficit, \$159 million, was for chemical protective items, overgarments, foot covers, and glove sets.

Of the \$100 million received from the Congress for fiscal year 1978 stock fund war reserves, \$86.4 million was earmarked for U.S. Army, Europe. This was shown in the fiscal year 1979 budget request to the Congress as a reduction to U.S. Army, Europe's, \$181.4 million deficiency. However, the Department of the Army later transferred \$63.1 million of the \$86.4 million to the Army Support Activity which obligated the funds to procure its chemical protective items. The other \$23.3 million was obligated to U.S. Army, Europe, to satisfy its shortages. Army officials said the funds were transferred because of storage limitations in U.S. Army, Europe. If stocks cannot be stored in Europe, they can be prepositioned in the United States. The Support Activity is responsible for managing Army's stateside prepositioned stocks.

The Army's procurement plan is to eliminate U.S. Army, Europe, stock fund deficiencies by requesting congressional funding for fiscal years 1979 and 1980. The Army plans to eliminate other prepositioned shortages, including stateside categories, beginning in fiscal year 1981.

Production must fill peacetime needs first

Before any chemical protective items (overgarments, foot covers, and glove sets) can be placed in war reserve stockage, peacetime requirements for these items must be met. Army officials said that the peacetime requirement for each of these items is estimated to be deleted units. They also stated that deleted of these items will wear out each year due to training, and that production can only supply deleted units per month. At

this rate, we calculated that it will take between [deleted] months to fill the peacetime requirement. Therefore, it will not be possible to start filling war reserve needs until this requirement is met.

The Army obligated \$63.1 million of the total \$100 million fiscal year 1978 war reserve funds received from the Congress to buy chemical protective overgarments, foot covers, and glove sets. Although these funds have been obligated, the items will not be available for war reserve stockage for [deleted] months or until the peacetime requirement is filled.

Recent studies resulted in decreasing requirements

The Army's war reserve requirement studies for chemical protective items are based on a toxic environment for every day of the [deleted] day NATO planning scenario, with replacement at the rate of 1 per individual every [deleted] days. This assumption results in a considerable item and dollar requirement. The item requirement is [deleted] chemical protective overgarments, foot covers, and glove sets. The dollar requirement for these items totals \$496 million. [deleted]

Army officials stated that a later study changed the rate for replacing the chemical protective items to 1 per individual every [deleted] days, which reduced the total item and dollar requirement. Using the above mentioned assumptions as a basis, [deleted] chemical protective overgarments, foot covers, and glove sets valued at \$315 million would be required to be prestocked for war reserves.

Army officials stated that a more recent study for the chemical protective items calls for replacing 1 per individual every [deleted] days. If the assumptions remained the same (i.e., [deleted] [deleted] day NATO planning scenario, and replacement at the rate of 1 per individual every [deleted] days), the total item quantity and dollar requirement would be considerably less.

Army officials also said that the Commander, U.S. Army, Europe, has requested that [redacted]

[redacted] deleted

[redacted] Using this assumption and computing replacement based on a toxic environment for every day of the [redacted] day NATO planning scenario with replacement at the rate of 1 per individual every [redacted] days, the total dollar requirement would be between \$315 million and \$496 million.

Length of chemical war
substantially affects requirement

From above, the number of troops requiring the chemical protective clothing and the replacement rate greatly affects the total number of items and dollar war reserve requirement. Another very important factor affecting the requirement is the length and severity of the chemical conflict. Fiscal years 1978 and 1979 requirements presented to the Congress were based on a toxic chemical threat for every day of the [redacted] day NATO planning scenario with replacement at the rate of 1 per individual every [redacted] days.

We discussed the ability of the Soviet Union to sustain a chemical war for a [redacted] day period. Army officials estimate the Soviet Union can probably launch an intensive [redacted] day chemical attack, with a probable backup of another [redacted] days in a NATO scenario. Responding to our next question as to the rationale for computing a [redacted] day requirement, Army officials stated the requirement was computed in this manner because they could not anticipate when a chemical attack would occur.

In our classified report entitled, "U.S. Chemical Warfare Defense: Readiness and Costs" (PSAD-77-105, Nov. 18, 1977), we stated that the amount of equipment necessary for war reserves is directly related to the assumption about the length and severity of the chemical conflict. In 1977, the Army planned to achieve, at a minimum, a war reserve to provide enough equipment for [redacted]

[redacted] deleted

We believe chemical protective clothing requirements should be computed based on the chemical threat rather than the total [deleted] day conventional war scenario.

CONCLUSIONS

Our review of the management of stock fund war reserves indicates management type problems exist in the following areas:

- No incentive exists to identify or fund the most essential requirements.
- Continuing disagreements between Army officials as to the essentiality of items prepositioned in Europe.
- Funding controls impede transfer of stocks between categories.
- No mechanism exists to transfer war reserve assets between DOD components.
- Numerous organizational elements involved with clothing and textile war reserves diffuse management responsibility for determining requirements and controlling assets.
- Provisioning and replacement rates for chemical protective clothing are still being refined which results in fluctuating requirements.
- Chemical protective clothing requirements for Europe comprised the major portion of the Army's fiscal year 1979 stock fund budget request to the Congress. Active Army needs are planned to be filled first and current production estimates indicate that no chemical clothing will be available for war reserve stockage for the next [deleted]
- Chemical warfare protective clothing requirements are being computed on a conventional war basis when the chemical threat is estimated to be for a lesser period of time.
- Duplicate requirement data was presented to the Congress in fiscal year 1978.

RECOMMENDATIONS

We recommend that the Secretary of Defense:

- Seek legislation to specifically allow transfer of assets between Defense components to fill high priority prepositioned stock shortages.
- Direct the Army to present to the Congress only those stock deficiencies related to clothing and textiles managed, controlled, and funded by the Army exclusively, and not include DLA's other war reserve requirements so as to avoid duplicative data being presented to the Congress in future budget requests.
- Direct the Army to base chemical protective clothing requirements on the latest chemical warfare threat assessments, including the chemical threat assessment period, which is shorter than the deleted day conventional war scenario.

AGENCY COMMENTS AND OUR EVALUATION

DOD officials agreed with our recommendations to place more emphasis on the stock fund war reserve program. Specifically, DLA elements will be required to coordinate and transfer assets to fill priority shortage categories where practicable. Future Army budget justifications will not include DLA's OWRMR so as to avoid duplicative data being presented to the Congress.

Army officials agreed to study our recommendation related to chemical protective clothing needs to determine if current threat scenarios could be satisfied by computing requirements as outlined in our recommendation.

APPENDIX I

APPENDIX I

POTENTIAL SAVINGS BY REDUCING AVIATION CONSUMABLE AND REPAIRABLE REQUIREMENTS

Item	Aircraft application	Unit cost	Aviation Command's computed war reserve materiel requirement	GAO computations (note a)			Total reduction	Cost savings
				1	2	3		
Cap corner	UH-1M, UH-1H	\$ 2.21	1,380	749	-	-	1,380	\$ 3,049.80
Strap assembly	AH-1G, TH-1G AH-1S, UH-1M	506.00	1,047	1,028	1,022	1,016	31	15,686.00
Adapter assembly	AH-1S	58.86	2,381	1,984	649	-	2,381	140,145.66
Filter element	AH-1S, OH-58C OH-58A	26.85	675	524	379	381	294	7,893.90
Blade assembly	AH-1G, TH-1G AH-1S, UH-1M	7,722.00	771	702	681	658	113	872,586.00
Fitting	AH-1S	958.00	302	202	172	44	258	247,164.00
Total			6,556	5,189	2,903	2,099	4,457	\$1,286,525.36
			b/	1,367	2,286	1,804		

a/1 = Eliminating deleted day pipeline factor to support residual force at the end of planning scenario (see ch. 3).

2 = Eliminating wartime safety level requirement (see ch. 4).

3 = Using the D-Day Program Change Factor when computing D-Day assumed peacetime assets (see ch. 5).

b/Eliminating the factors outlined in note a above would result in removing the item from war reserve stockage since peacetime assets and receipts from pre-D-Day contracts would satisfy the total consumption need for the item.